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Supporting Health and Recovery

beacon
health options

Child Health and Development Institute of Connecticut, Inc.

Heavy Traffic Ahead -

Improving Care & Throughput in Emergency Crisis and Acute Treatment Services for Children and Youth

September 10, 2019

Agenda

1	Throughput	2	Rising Acuity
3	Trends in ED Utilization	4	ED Stuck
5	Inpatient Utilization	6	System Capacity
7	Mobile Crisis Intervention Service	8	Alternative Services
9	Group Solutioning	10	Final Action Steps

Chapter

01

Throughput

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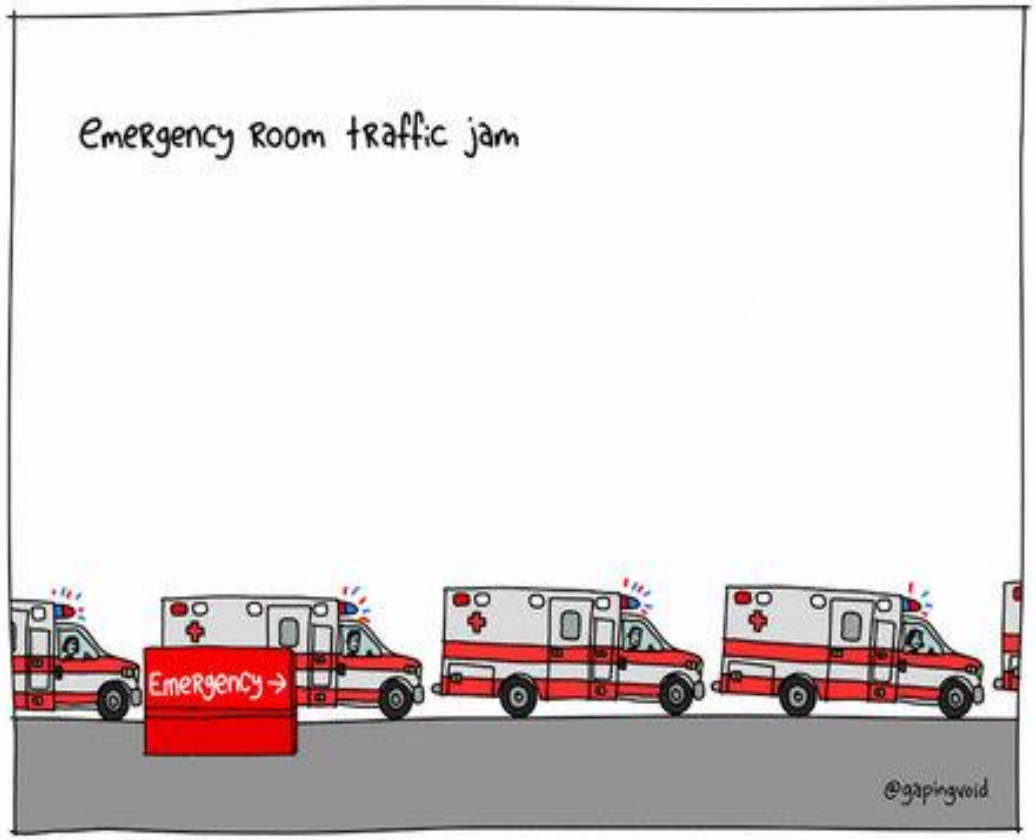
Throughput



Definition – Productivity of a machine, procedure, process, or system over a unit period.

Throughput In Crisis Care - time from inquiry through admission, discharge, follow-up, and eventual stabilization. A smooth even flow without preventable delays.

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Systems vs. Service Analysis

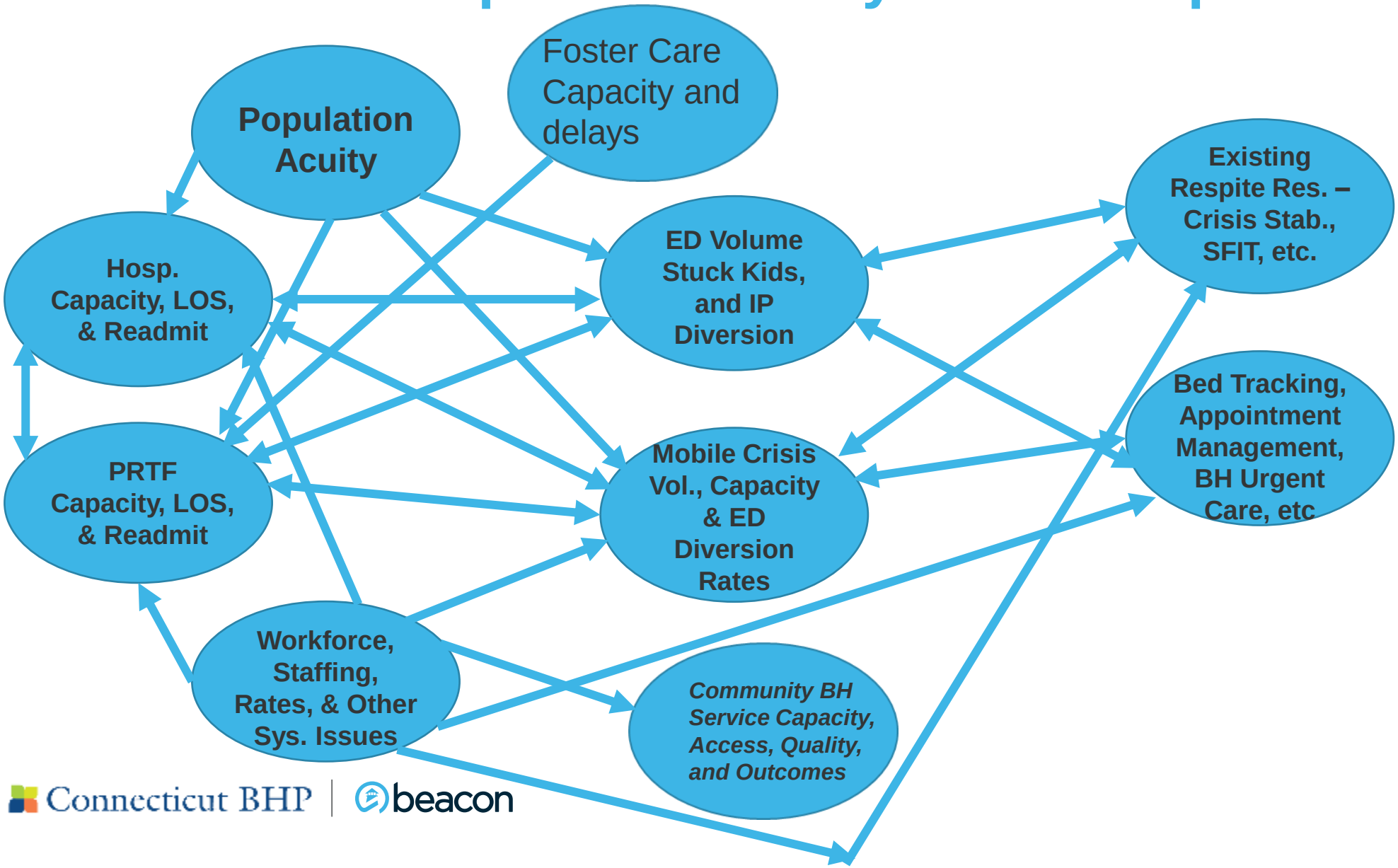
System Level Analysis

- Problems with access, efficiency, being stuck in care, are primarily influenced by the inter-relationships between various services and levels of care.
- Problems are viewed as a **SYSTEMS Issue**

Program Level Analysis

- Problems with access, efficiency, being stuck in care, are influenced by the functioning of the particular level of care where the problem exists.
- Problems are viewed as a **Program Issue**

Inter-relationships between System Components



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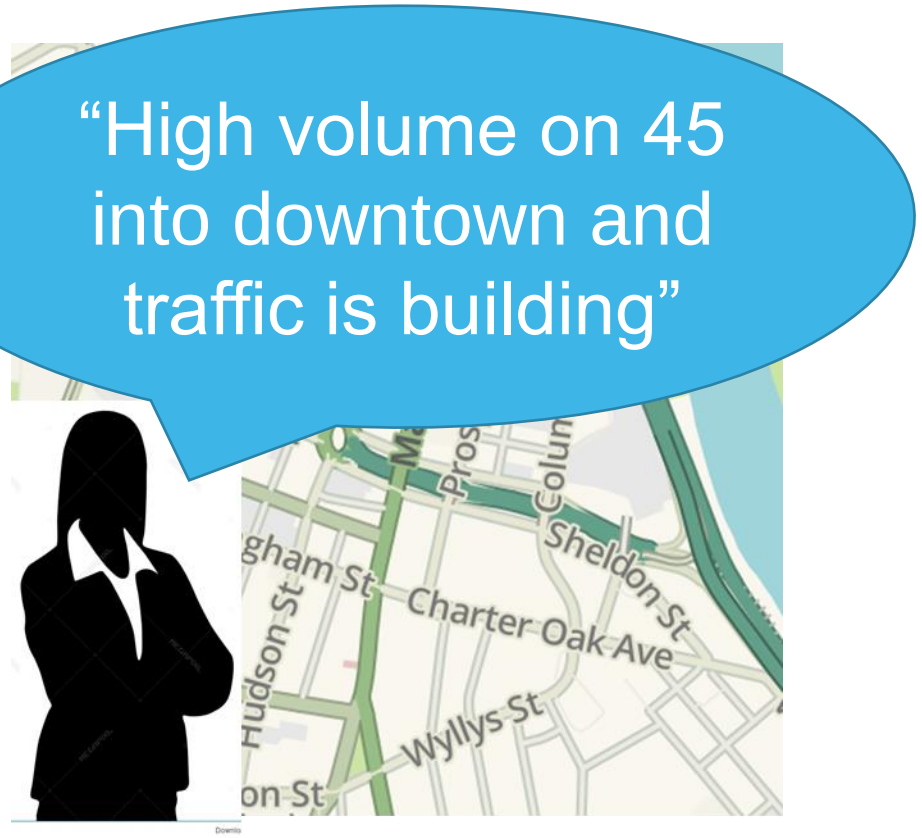
Chapter

02



“Impact of Rising Acuity”

Trends in completed suicide as a proxy for acuity

RESEARCH LETTER

Trends in Emergency Department Visits for Nonfatal Self-inflicted Injuries Among Youth Aged 10 to 24 Years in the United States, 2001-2015

JAMA November 21, 2017 Volume 318, Number 19

Melissa C. Mercado, PhD, MSc, MA
Kristin Holland, PhD, MPH
Ruth W. Leemis, MPH
Deborah M. Stone, ScD, MSW, MPH
Jing Wang, MD, MPH

Death Rates Due to Suicide and Homicide Among Persons Aged 10–24: United States, 2000–2017

Sally C. Curtin, M.A., and Melonie Heron, Ph.D.

NCHS Data Brief ■ No. 352 ■ October 2019

Suicidal Attempts and Ideation Among Children and Adolescents in US Emergency Departments, 2007-2015

JAMA Pediatrics June 2019 Volume 173, Number 6

Brett Burstein, MDCM, PhD, MPH
Holly Agostino, MDCM
Brian Greenfield, MD

Hospitalization for Suicide Ideation or Attempt: 2008–2015

Gregory Plemmons, MD,[a] Matthew Hall, PhD,[b] Stephanie Doupnik, MD,[c] James Gay, MD, MMHC,[a] Charlotte Brown, MD,[a] Whitney Browning, MD,[a] Robert Casey, MD,[a] Katherine Freundlich, MD,[a] David P. Johnson, MD,[a] Carrie Lind, MD,[a] Kris Rehm, MD,[a] Susan Thomas, MD,[a] Derek Williams, MD, MPH[a]

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Summary of Suicide as a proxy for acuity

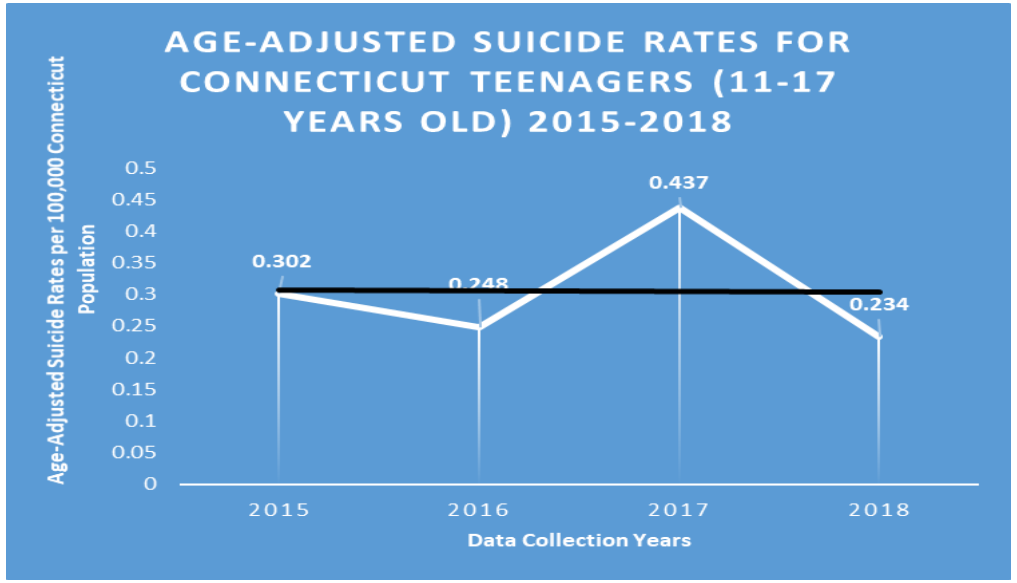
NATIONAL RATES

- Increase in suicides among youth affected males and females, but has been more noticeable among females.
- Emergency department visits for non-fatal, self-inflicted injury have increased 50% to 92% from early-mid 2000s to 2015.
- The proportion of use of emergency department for suicide ideation (SI) and suicide attempt (SA) nearly tripled (2.76-fold) from 2008 to 2015.

CONNECTICUT RATES

- CT Rates have trended lower than national rates.
- CT saw a doubling of youth suicide rates (10-14) but this is due to small numbers (went from 1 to 2).

CT Rates of Teen Suicide Deaths (DPH)



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Chapter

03

ED and IP Utilization

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Behavioral Health (BH) Emergency Department (ED): Visits & Unique Visitors

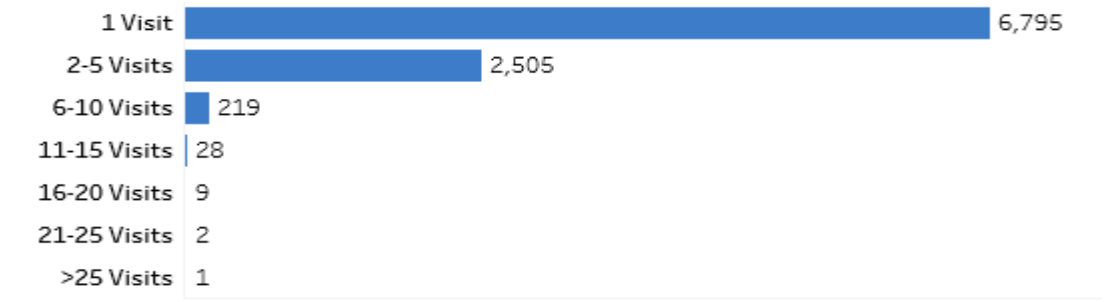
ALL PROVIDERS | January 1, 2018 to December 31, 2018

Youth/Adult
Youth

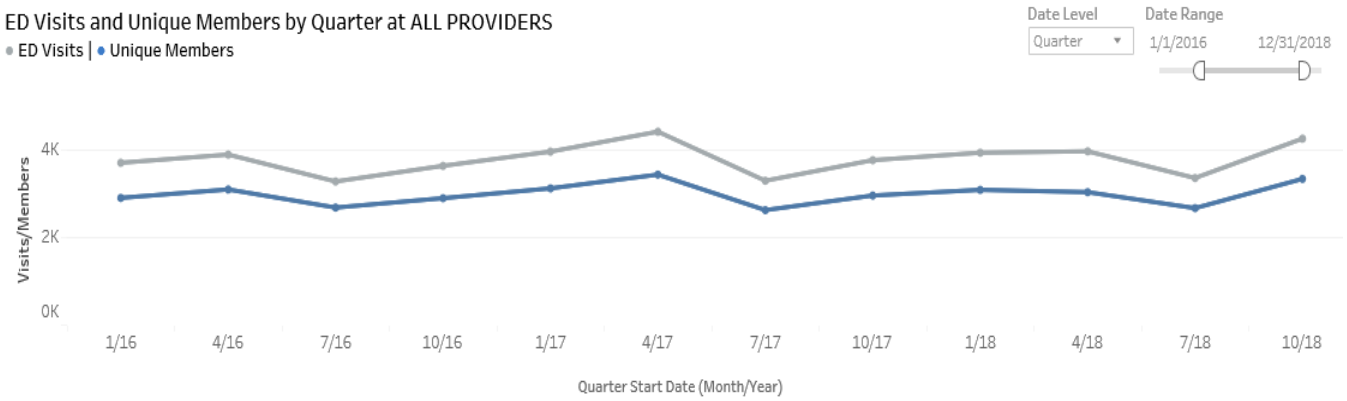
Primary Diagnosis
All

ED Visit Date
1/1/2018 12:00:00 AM to 12/31/2018 12:00:00 AM
and Null values

ED Visit Frequency at ALL PROVIDERS



ED Visits and Unique Members by Quarter at ALL PROVIDERS



14,498 15,426 15,506

- The majority of youth that visit the ED with a BH diagnosis visit once
- The increase in rates of BH ED visits was;
  - 2016 to 2017 - approximately 6%
  - 2017 to 2018 - essentially flat (.5%)

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Behavioral Health (BH) Emergency Department (ED): 7-Day Readmission

ALL PROVIDERS | January 1, 2018 to December 31, 2018

Youth/Adult: Youth

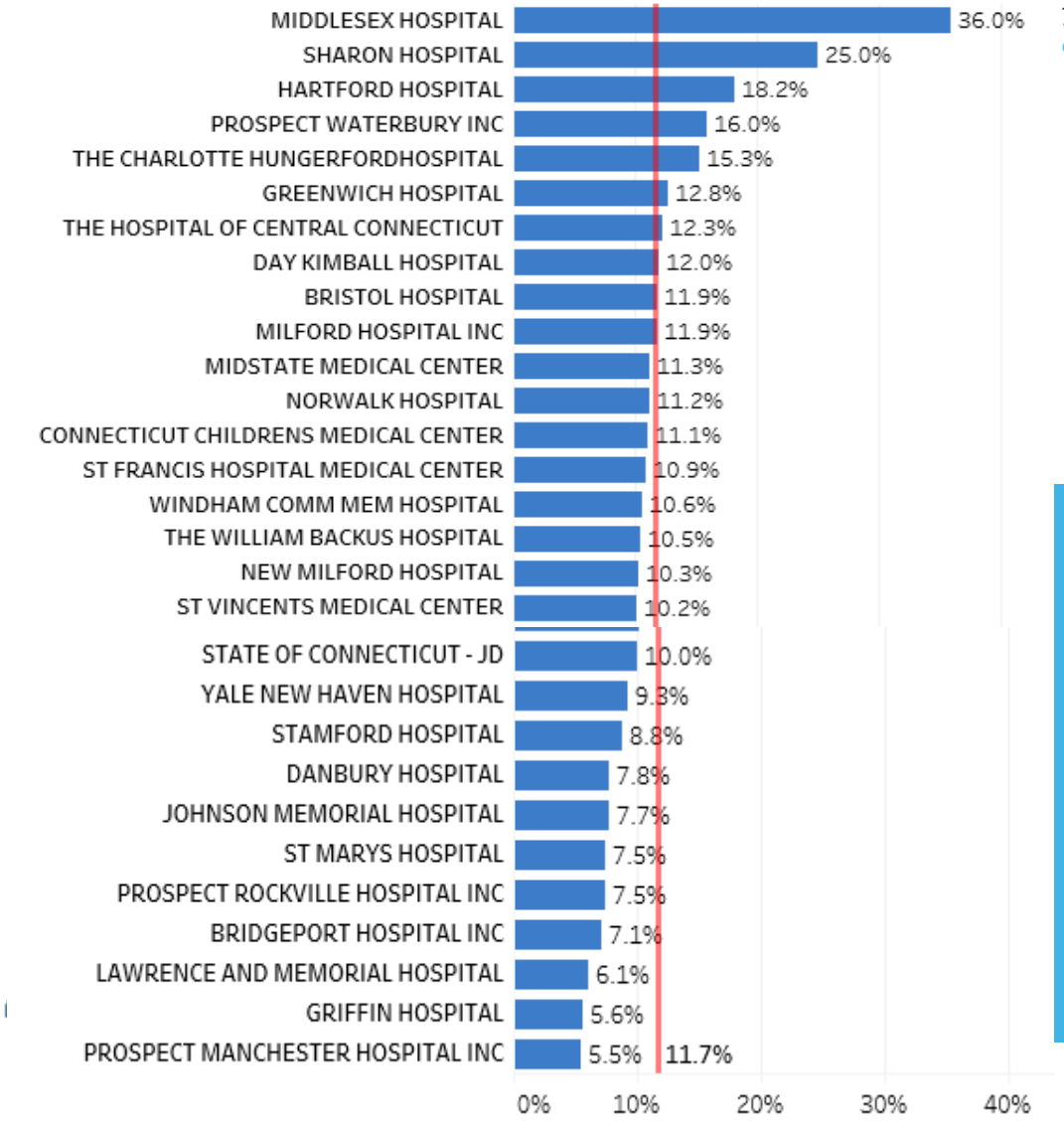
Select 7- or 30-Day Readmission: 7-Day Readmission

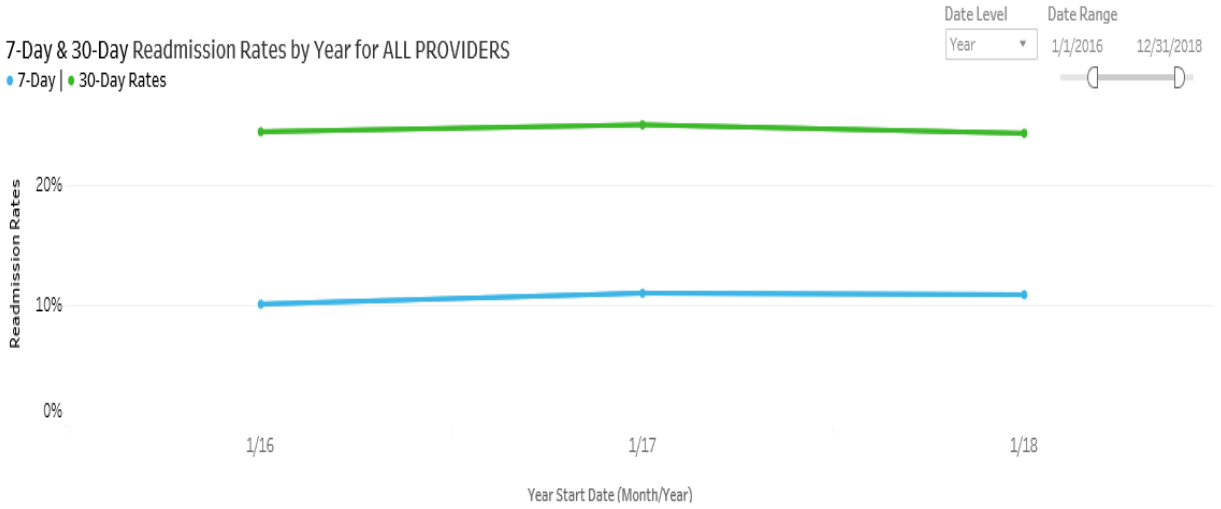
Primary Diagnosis: All

ED Visit Date: 1/1/2018 12:00:00 AM to 12/31/2018 12:00:00 .. and Null values

7-Day Readmission Rates by Provider

Click on a bar to filter other graphs by provider



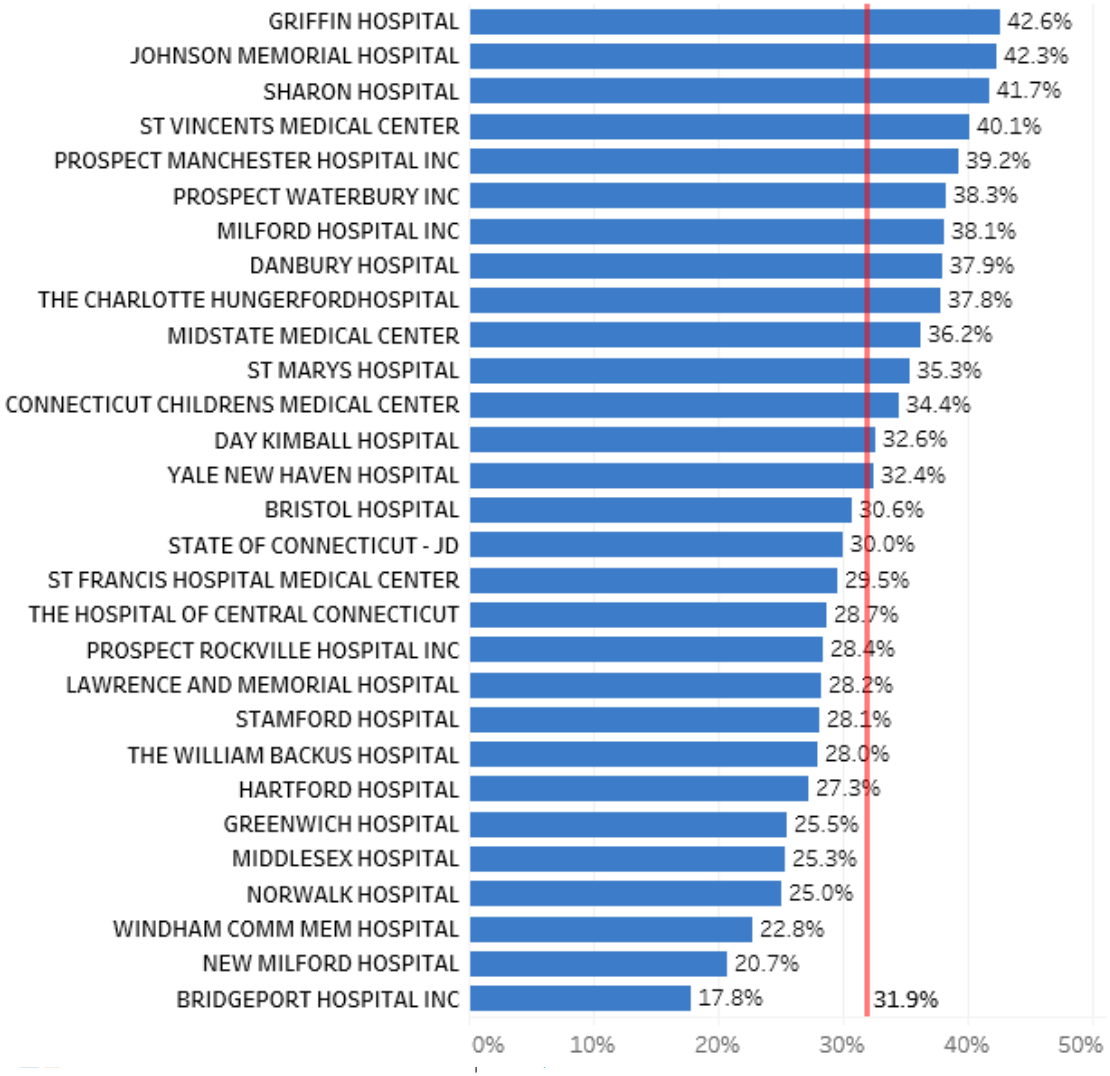


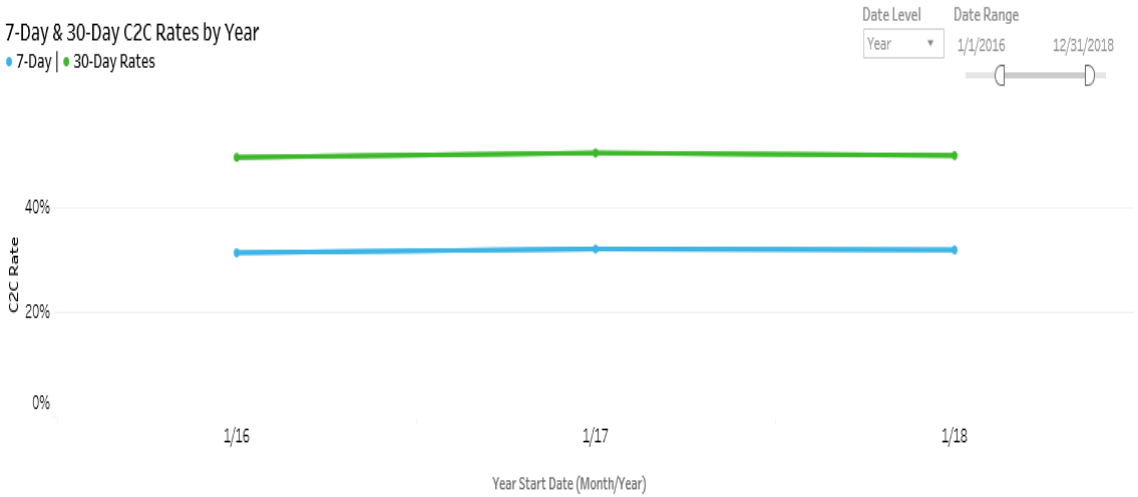
- Provider rates for 7-day BH readmissions to the ED vary from 36% to 5.5%.
- The 7-day rate has remained flat since 2016 at around 10%.
- The 30 day rate has also been flat since 2016 at roughly 24.5%.

Behavioral Health (BH) Emergency Department (ED): 7-Day C2C

ALL PROVIDERS | January 1, 2018 to December 31, 2018

Youth/Adult: Youth | 7 or 30 Day C2C: 7-Day C2C | Primary Diagnosis: All | ED Visit Date: 1/1/2018 12:00:00 AM to 12/31/2018 12:00:0.. and Null values





- Provider specific 7-Day Connect to Care rates range from 42.6% to 17.8%.
- Rates of 7-Day and 30-Day Connect to Care have been stable from 2016 through 2017 at approximately 32% and 50% respectively.

Behavioral Health (BH) Emergency Department (ED): Inpatient Admissions

ALL PROVIDERS | January 1, 2018 to December 31, 2018

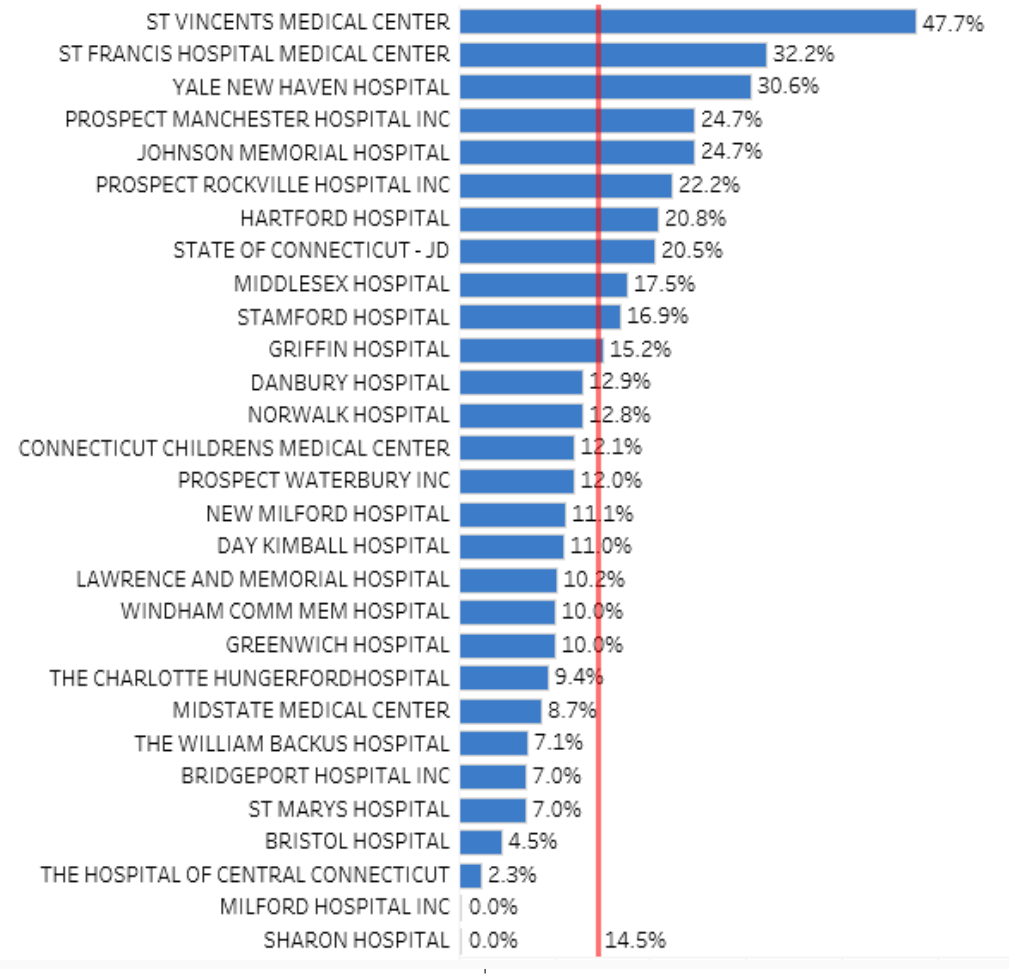
Youth/Adult: Youth

Primary Diagnosis: (All)

ED Visit Date: 1/1/2018 – 12/31/2018

% of Inpatient Admissions Post ED Visit by Provider

Click on a bar to filter other graphs by provider



Percent of ED Visits Resulting in an Inpatient Admission by Year for ALL PROVIDERS

Date Level: Year

Date Range: 1/1/2016 – 12/31/2018

- The rate of ED to inpatient admissions varies from a high of 47.7% to 0%.
- From 2016 to 2018 the number and percentage of BH ED to IP Admissions have been trending down from 2,519 to 2,368 and from 17.4% to 15.3%.
- Due to methodological limitations, actual ED to IP admissions may be undercounted

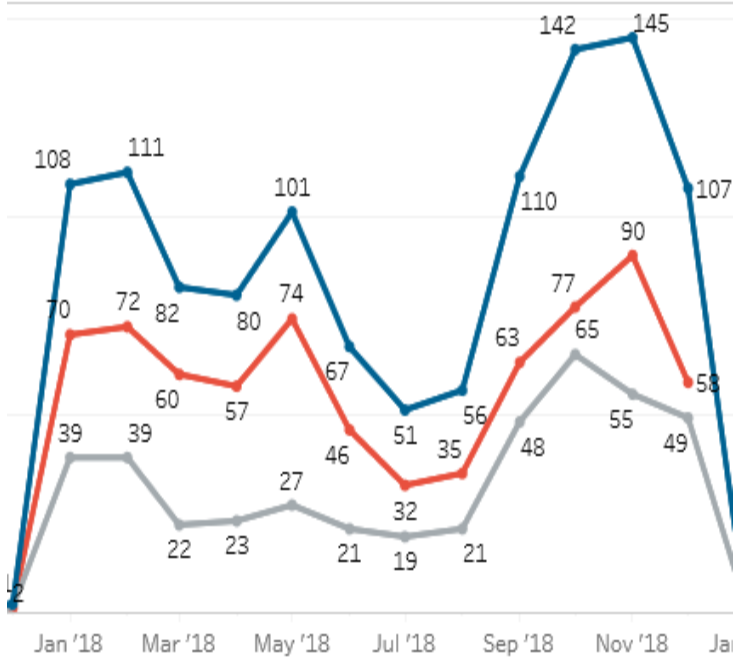
Chapter

04

ED Stuck

ED Stuck 2018 and 2019 YTD

2018

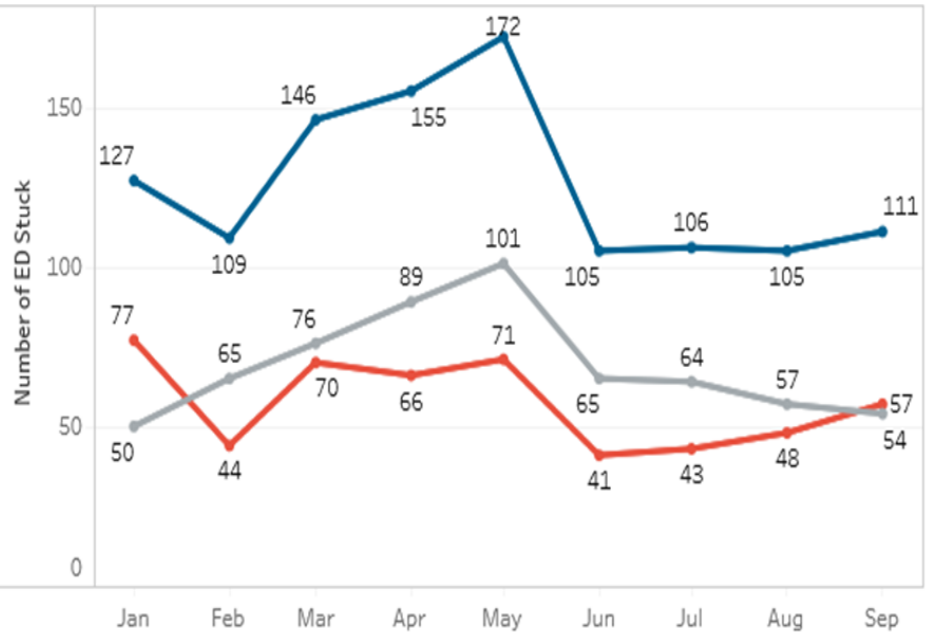


ED Stuck All Counts - All

Not unique members; Excluding CARES

● Total ED Stuck ● Recommended IPF ● Recommended Other LOC

2019



- ED Stuck determined by outreach to each ED and count of those youth in care more than 8 hours after medical clearance
- In 2018, ED Stuck saw a sharp increase beginning in September that continued through the end of the year
- In 2019, ED stuck remained high through May and then declined but did not return to the lower (50-60) range observed in the summer of 2018

Emergency Department (ED) "Stuck" Analysis

Monthly reporting on members identified as being in the ED for 8 hours or more

Age Group: (All)

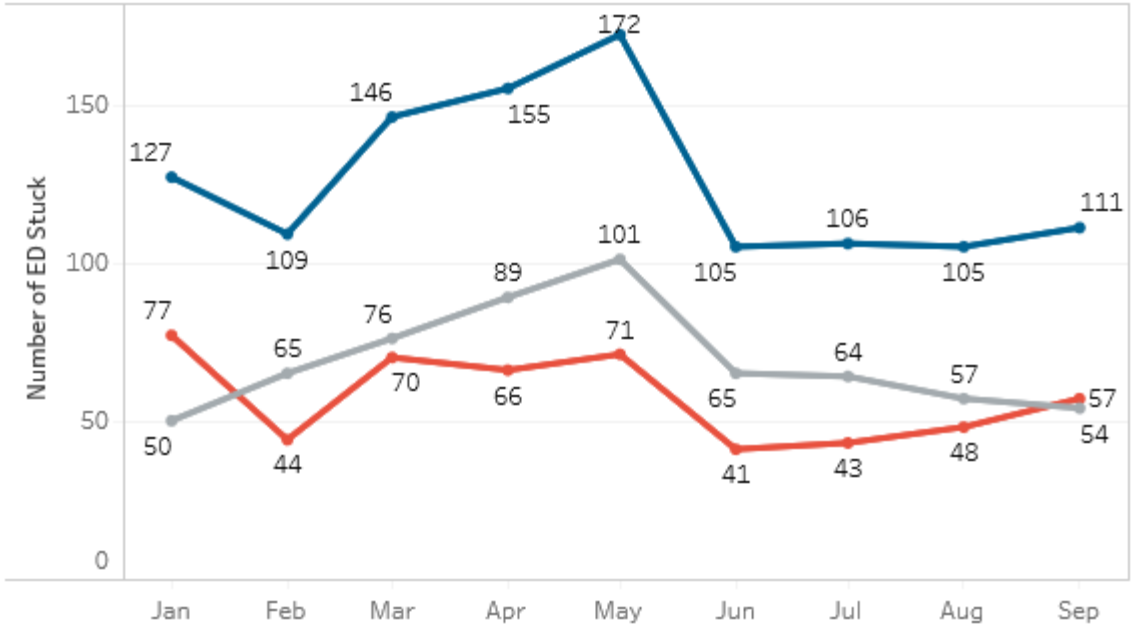
Select CCMC Only: (All)

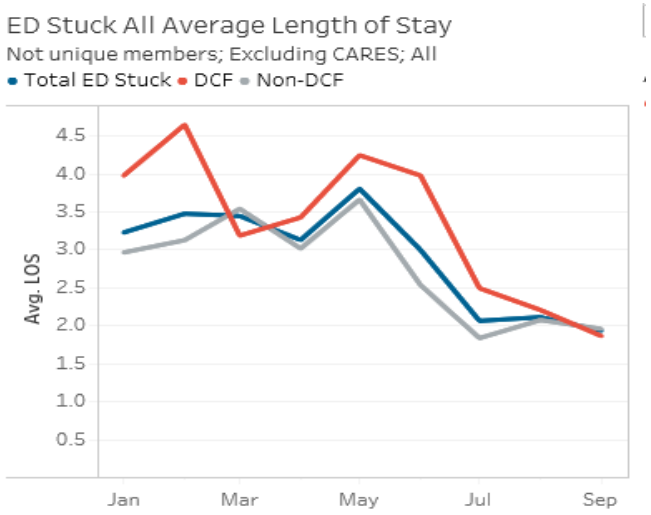
ED Stuck All Counts - All

Not unique members; Excluding CARES

● Total ED Stuck ● Recommended IPF ● Recommended Other LOC

2019 YTD





YTD ED Stuck All Length of Stay Distribution - All

Not unique members; Excluding CARES

- Year to date, ED stuck continues to show a predictable seasonal pattern of lower volume in the summer
- ALOS of ED stuck has been trending down since a peak in February

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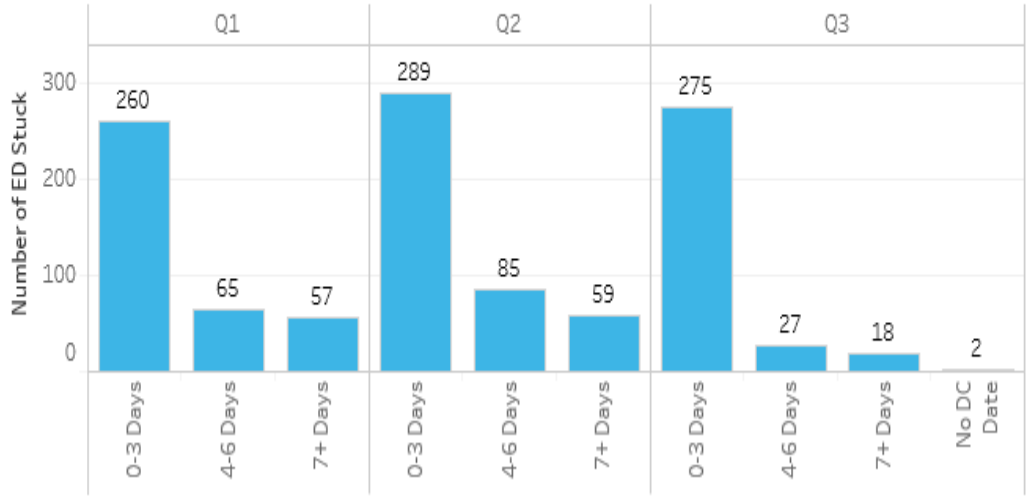
Emergency Department (ED) "Stuck" Analysis

Monthly reporting on members identified as being in the ED for 8 hours or more

2019 YTD

YTD ED Stuck All Length of Stay Distribution - All

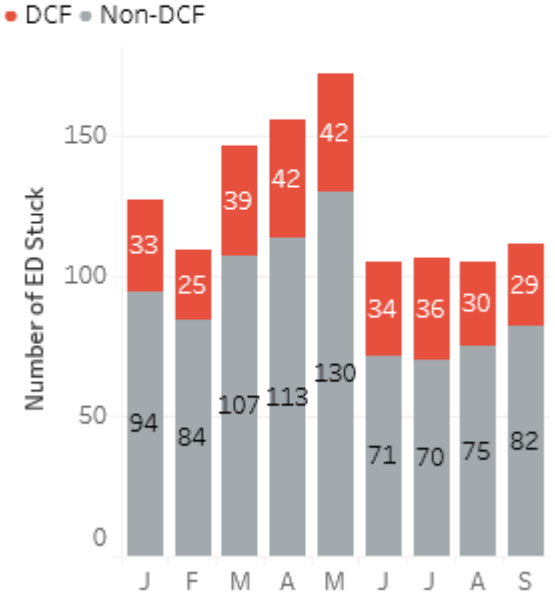
Not unique members; Excluding CARES



ED Stuck All YTD ALOS

DCF	Non-DCF	Grand Total
3.3	2.9	3.0

All ED Stuck All



- Although ED stuck ALOS has been trending down over the year, there are significant numbers of youth staying over 3 days.
- Most youth stuck in the ED are non-DCF although DCF youth are disproportionately over-represented

Chapter

05

IP Utilization

Inpatient Dashboard - Medicaid Youth (All)

PAR Provider: All

Showing 2019, Q1, 2019, Q2, 2019, Q3 and 1 more

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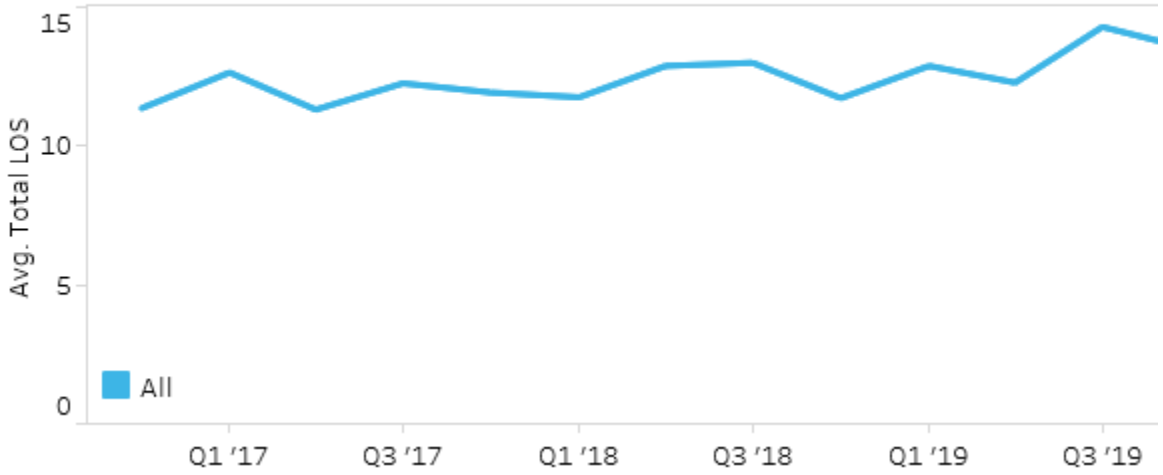
A Beacon Health Options-CT Dashboard

Data Last Updated: 10/22/2019

Average Length of Stay (ALOS)

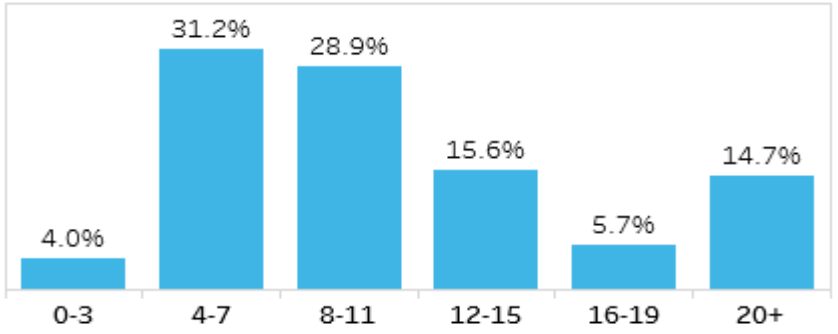
By Demographic: No Demographic Selected



Total ALOS	2016	2017				2018				2019			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
	11.3	12.6	11.3	12.2	11.9	11.7	12.9	13.0	11.7	12.9	12.3	14.3	

Length of Stay Frequency Distribution

2019, Q1, 2019, Q2, 2019, Q3 and 1 more



Compared to the Total

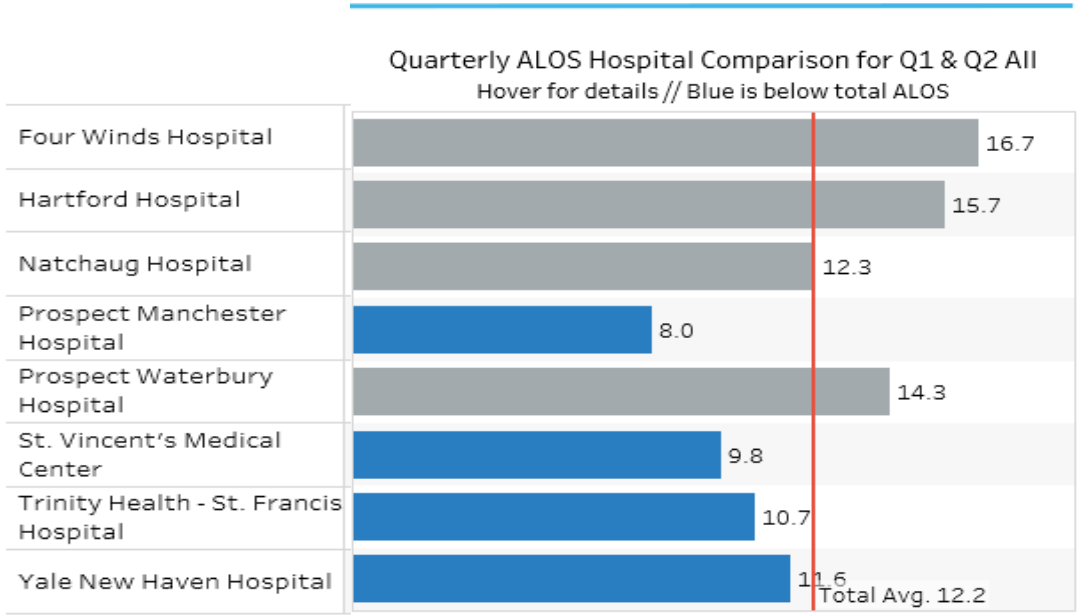
0-3	4-7	8-11	12-15	16-19	20+
4.0%	31.2%	28.9%	15.6%	5.7%	14.7%

Major Depress. Dx	Bipolar, Stress, Other..	All Other Dxs	Schizophrenia , Psychotic D..	Autism Dx
45.4%	40.4%	9.1%	4.2%	0.9%

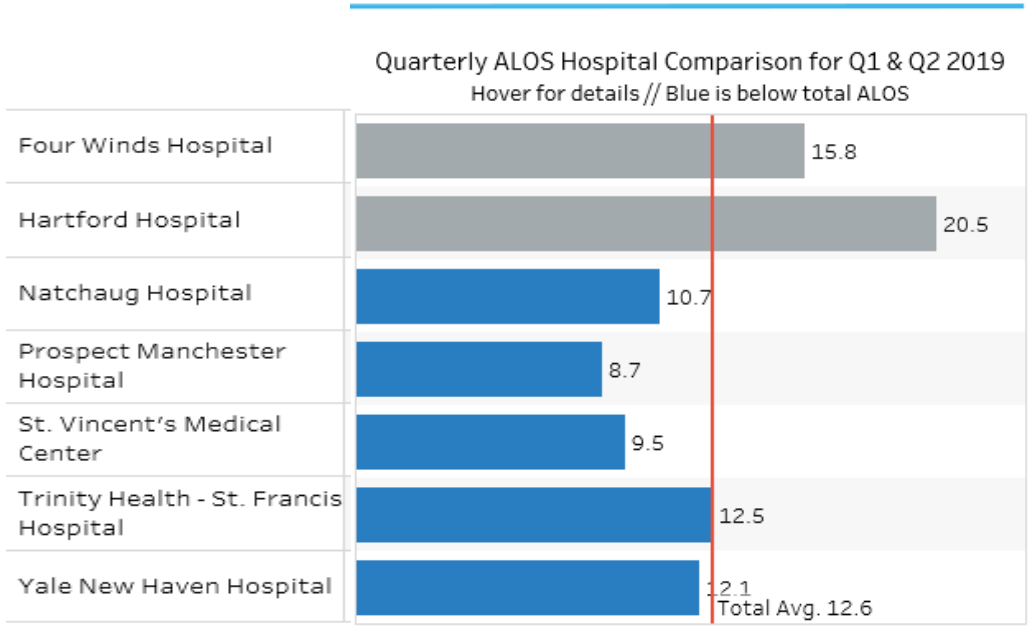
- 2019 Data is through Quarter 3, 2019
- ALOS for discharged youth trended up slightly in 2017 and 2018 but showed an upturn of roughly 1 day in quarter 3 of 2018 and 2019.
- Higher ALOS typically translates into reduced bed availability
- The modal ALOS is 4-7 days, followed by 8-11 days. Outliers and those on delay skew the ALOS to its current rate of 14.3.
- Major Depression is the most common diagnosis for inpatient admissions

- Four Winds, Natchaug, and St Vincent's, have seen a decrease in the 2019 ALOS rate compared to the average for the three years
- Hartford Hospital, St Francis, and Yale NHH have seen an increase compared to the average for the three years.

2017 to 2019



2019



Discharge Delay

Reduced Discharge Delay

When a child is ready to leave a psychiatric hospital, but a needed service is not immediately available, the child's discharge is delayed.

Beacon, DCF and DSS staff, and providers work together to identify available services while removing barriers to accessing treatment. As a result, the time children wait unnecessarily in hospitals has been greatly reduced as seen below.

2008 - 25.63%

Year-to-date - 7.22%

⬇ 72% Reduction

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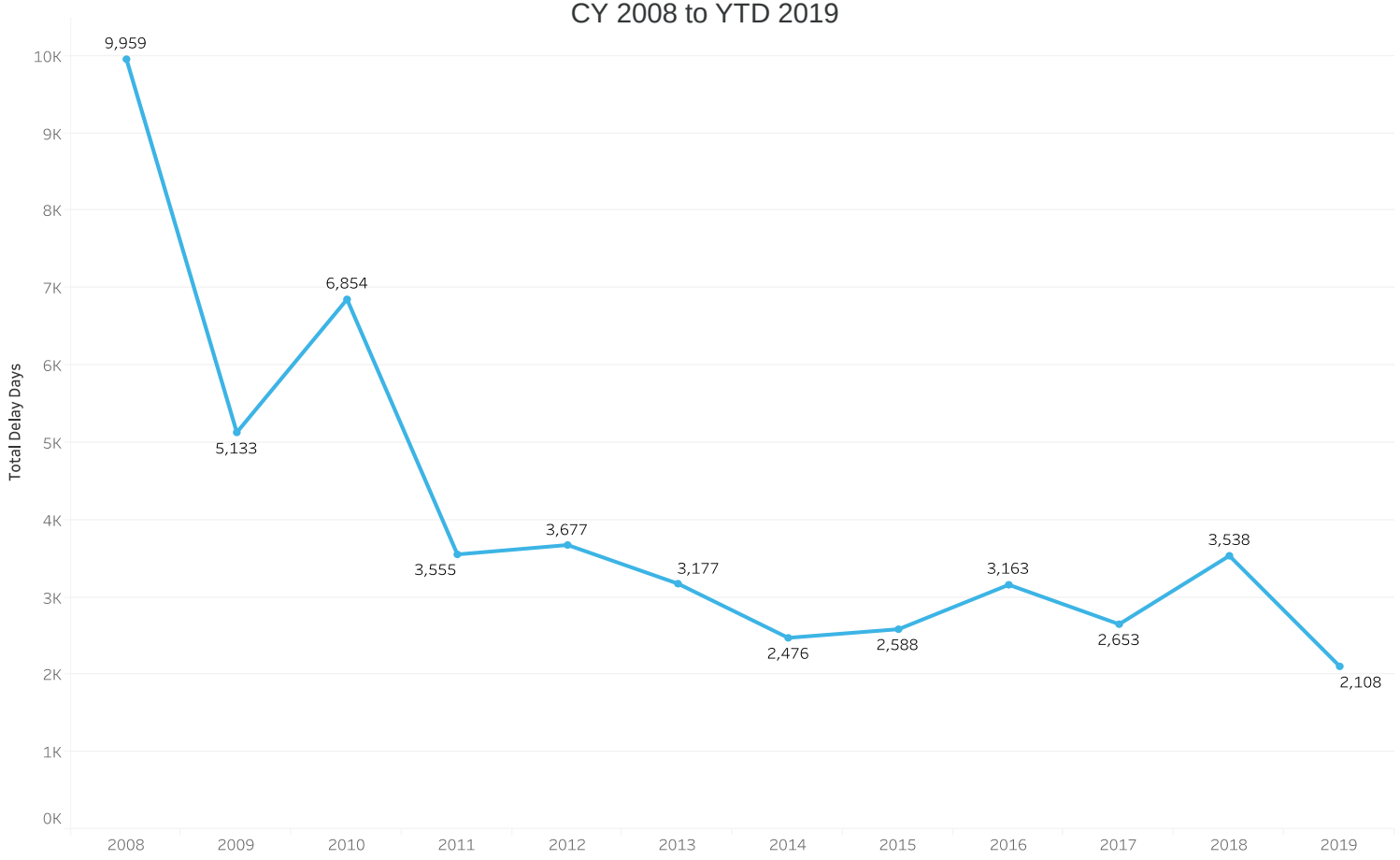
Total Discharge Delay Days

CY 2008 to YTD 2019



- **13 Years of Success** – Beacon has met the performance target in partnership with providers and state partners, defined by the percentage of discharge delay days, every year for the last 13 years

- This has resulted in increased access and less days for youth in restrictive settings

Chapter

06

System Capacity

Inpatient and PRTF Capacity

- System Capacity for Inpatient and PRTF has declined
  - 2018 - Waterbury Hospital transitioned their 6 bed IP adolescent unit to adults
  - 1st Quarter of 2018 – acuity issues led to temporary reduction in capacity of 4 beds at Solnit South PRTF
  - 2018 - Boys and girls village closed their 16 Bed PRTF Program
  - In 2019 there have been temporary reductions in inpatient capacity related to staffing and milieu acuity & dynamics
  - 2019 - Solnit capacity for PRTF and IP declined temporarily over the last year to accommodate physical plant upgrades

- Programmatic capacity for acute and subacute care declined 13.3% in 2018

- Further program capacity reductions occurred in 2019

- System capacity for PRTF expanded in 2019 at The Village for Families and Children (8 additional Beds) and an additional 10 beds at CCOH are anticipated in 2020.
- Solnit inpatient and PRTF are now back at full capacity

- Expansion of the Village and planned expansion at CCOH PRTF capacity

- Despite some new beds, system capacity remains at a net loss

Chapter

07

Mobile Crisis Intervention Service

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MOBILE CRISIS INTERVENTION SERVICES

Presentation to the Behavioral Health Partnership Oversight Council Child/Adolescent Quality, Access & Policy Committee

November 20, 2019

Mobile Crisis Intervention Services

❖State-wide, community based and family supportive clinical intervention service for children & adolescents (0-17 18 if still enrolled in school) experiencing a behavioral health crisis or non-crisis behavioral health need.

❖Provides rapid emergency crisis stabilization for children and their families as well as short-term (up to 45 days) follow-up care and connection to other services

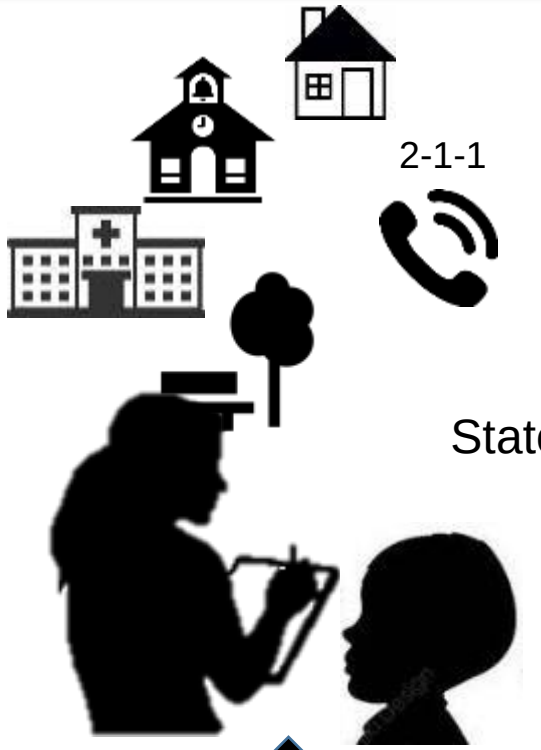
❖Licensed or license eligible Clinical Psychologists, Clinical Social Workers, Marriage and Family Therapists, Professional Counselors, and Alcohol and Drug Counselors

❖Three primary components of the service:

1. Statewide Call Center
2. Provider Network
3. Performance Improvement Center

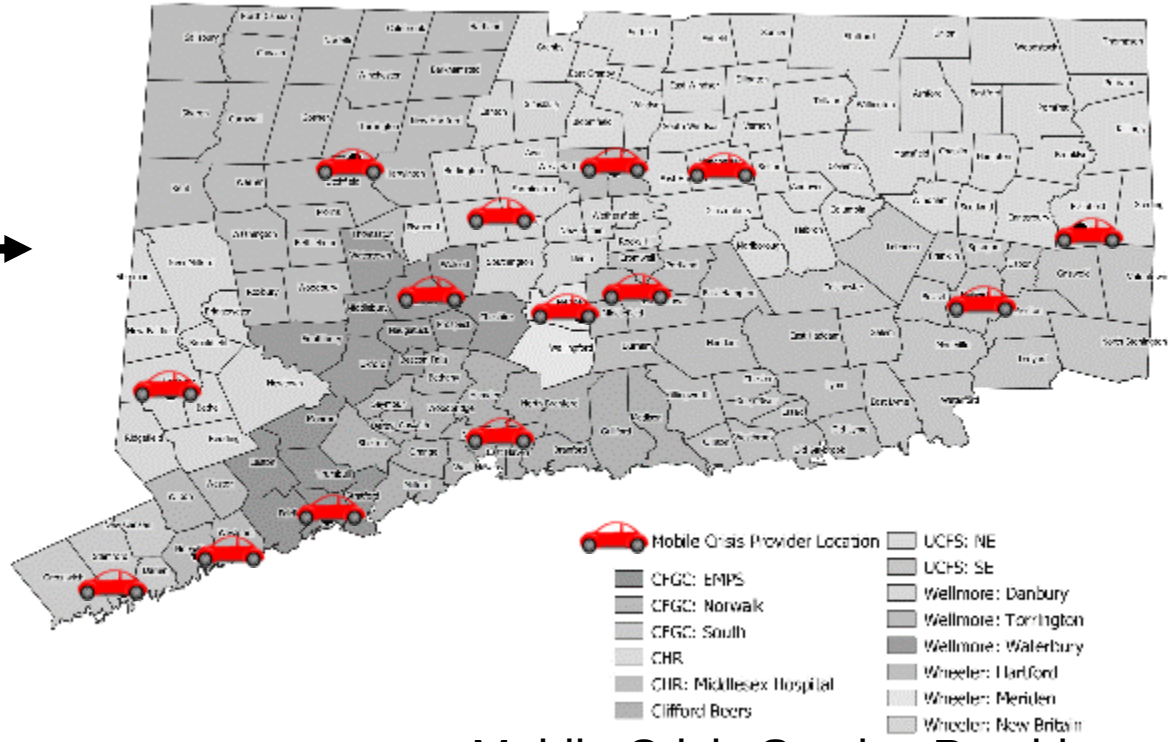
❖ **Connecticut's Mobile Crisis service does not have pre-determined criteria for what qualifies as a crisis. A crisis is defined by the <u>caller</u> (child, family, school, other), not by 211 or the Mobile Crisis provider.**

Mobile Crisis: Mobile Provider Network

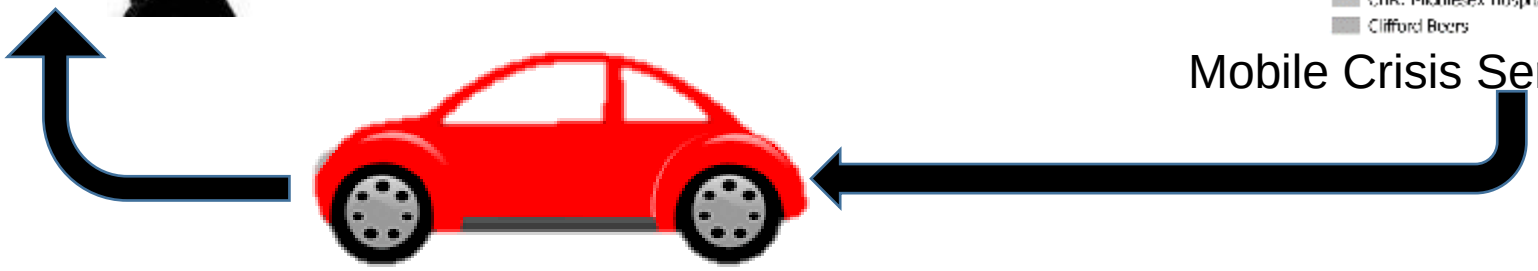


2-1-1

Statewide Call Center



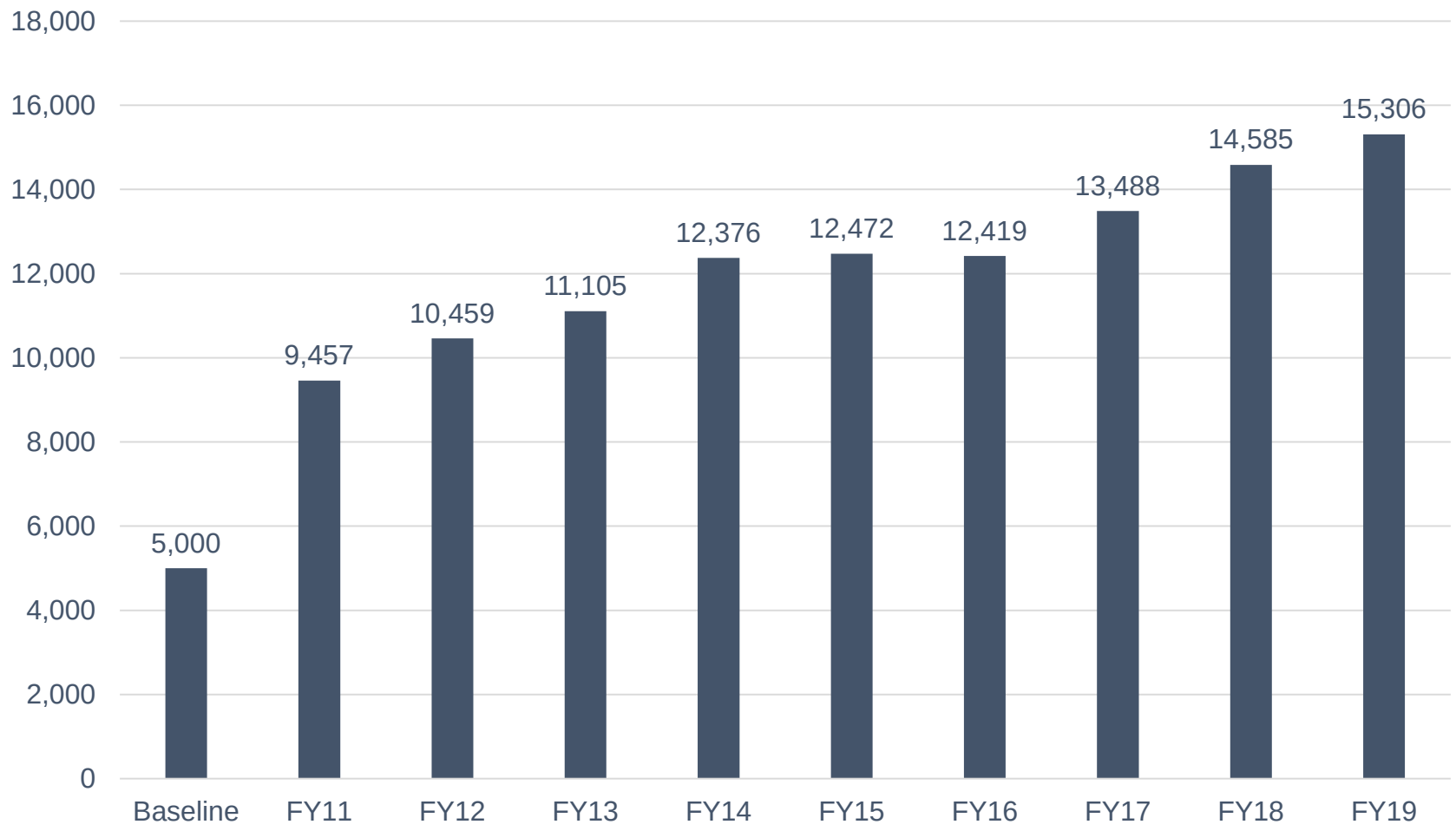
Mobile Crisis Service Providers



Mobile Crisis Available Services

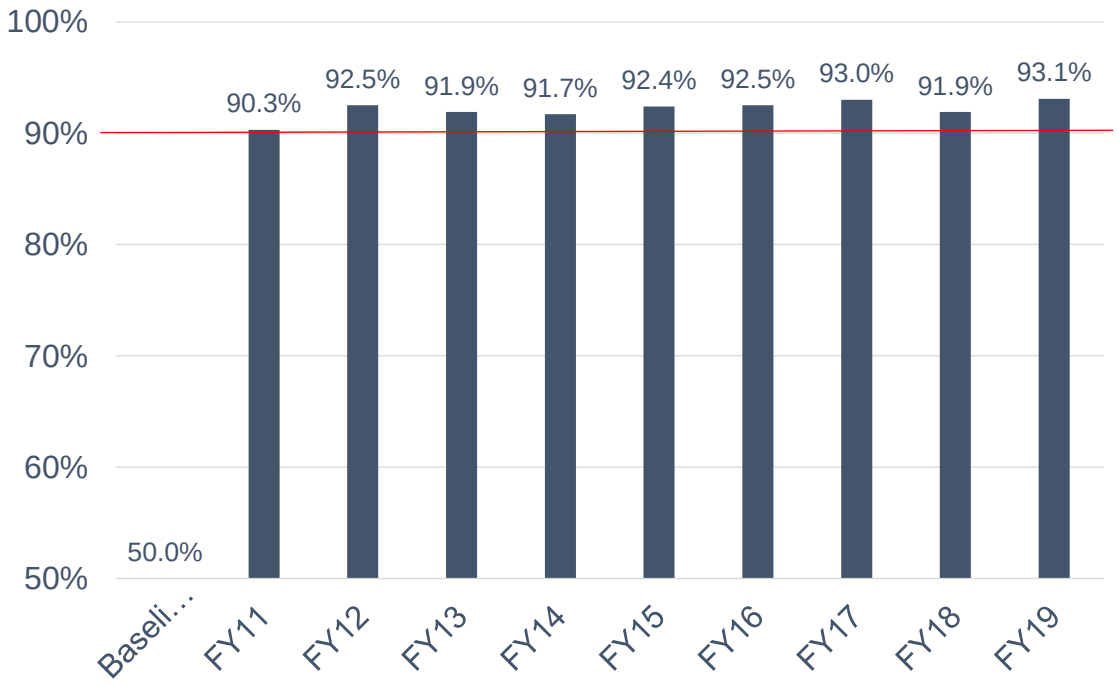
- **Mobile response** to homes, schools, EDs, community locations
- **Crisis stabilization**
- **Diversion** from the ED, inpatient, and other deep-end settings
- **Screening** and **assessment** using standardized instruments
- **Follow-up services** for up to 45 days (unlimited episodes of care)
- Access to **psychiatric evaluation** and medication management
- **Collaboration** with families, EDs, schools, police, other providers
- **Referral and linkage** to ongoing care as needed

Episode Volume Over Time (FY11 – FY19)

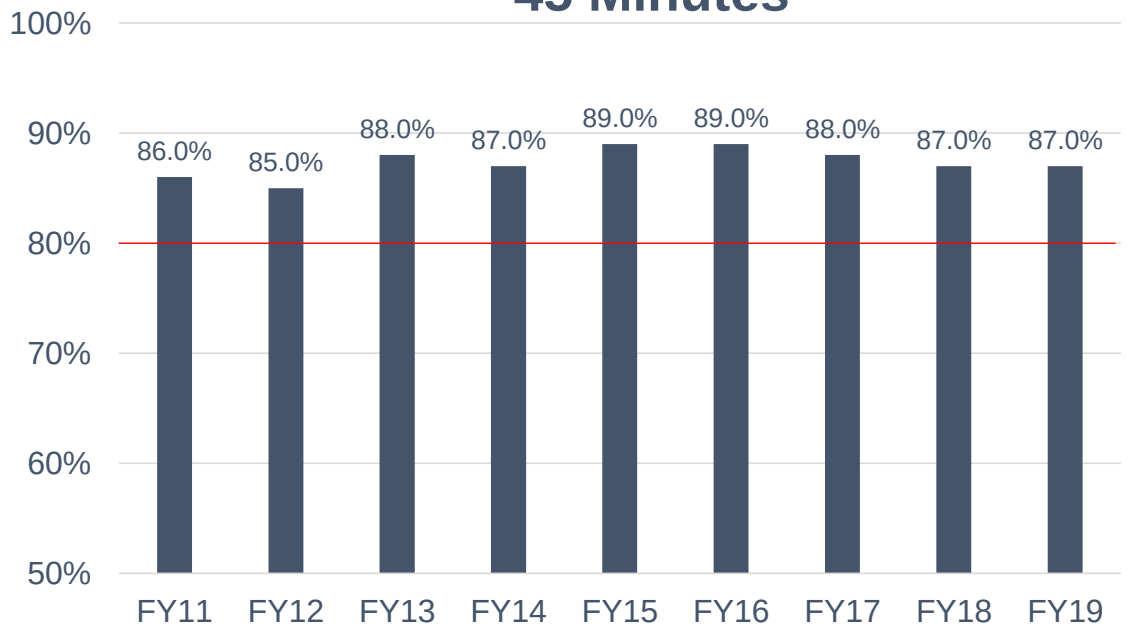


Statewide Benchmarks Over Time

Mobility
Goal: 90% of Responses are Mobile

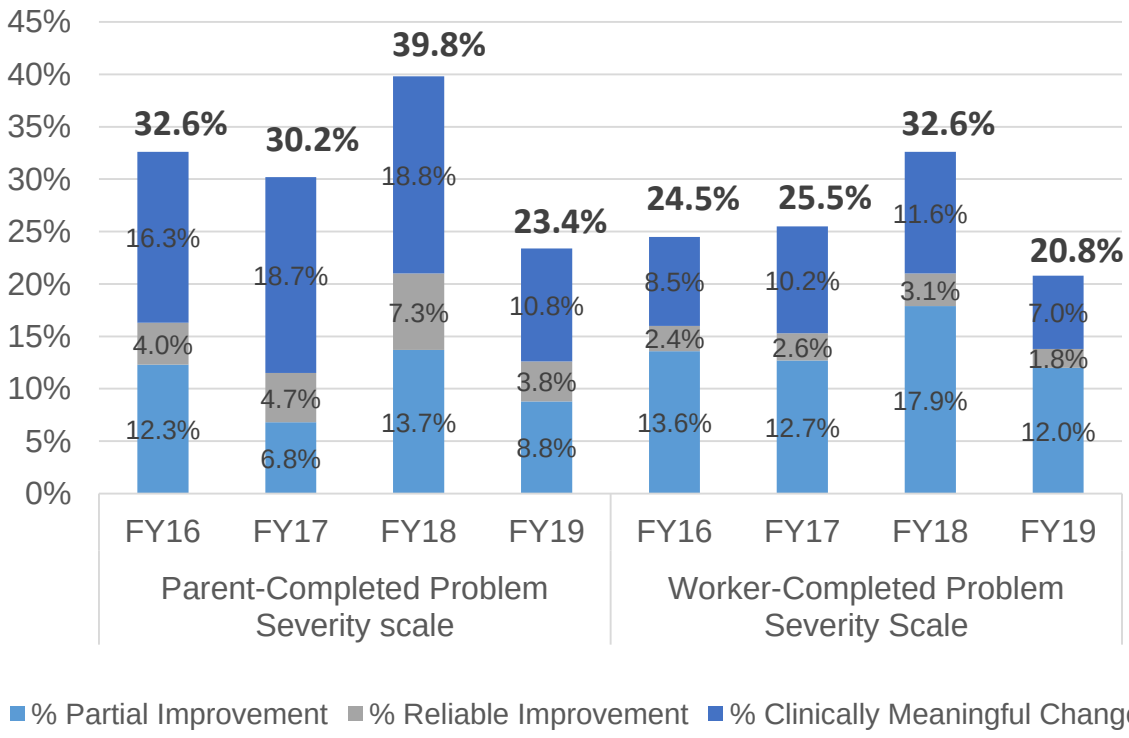


Response Time
Goal: 80% of Responses are Within 45 Minutes

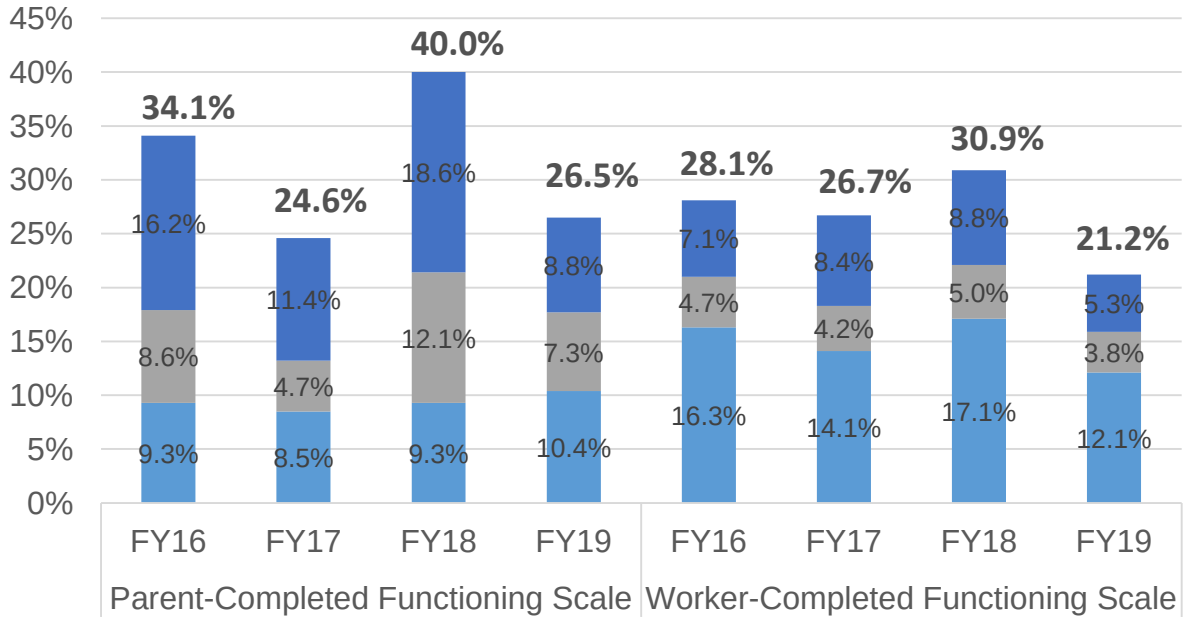


Statewide Outcomes Over Time

Improvement in Problem Severity as Measured by the Ohio Scales



Improvement in Functioning as Measured by the Ohio Scales

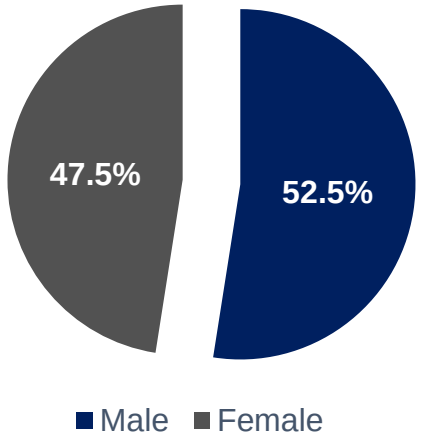


% Partial Improvement % Reliable Improvement % Clinically Meaningful Change

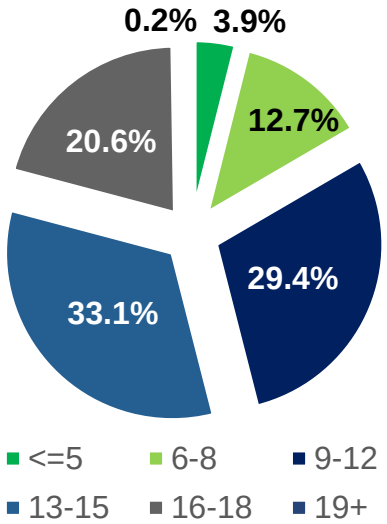
% Partial Improvement % Reliable Improvement % Clinically Meaningful Change

Children Served in FY19

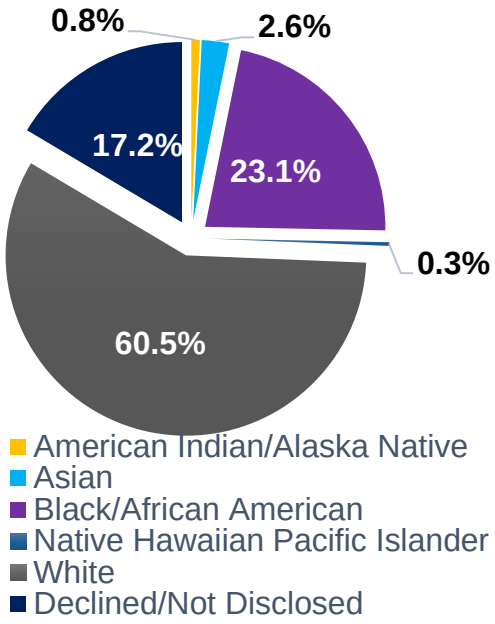
Sex*



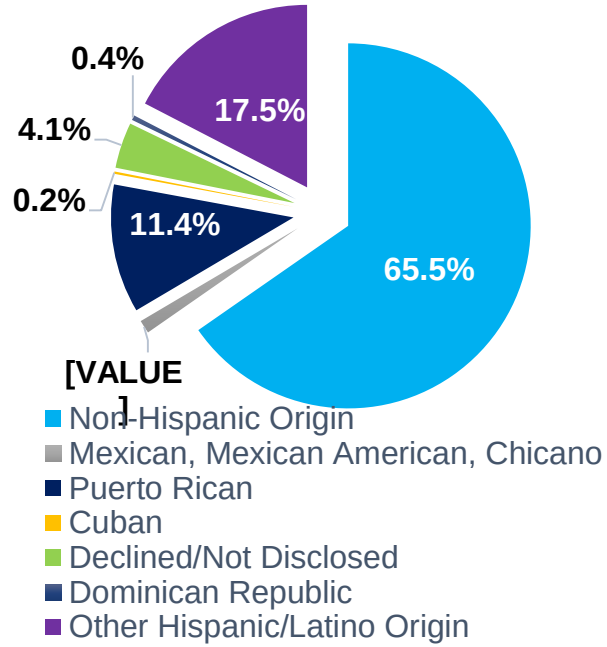
Age



Race

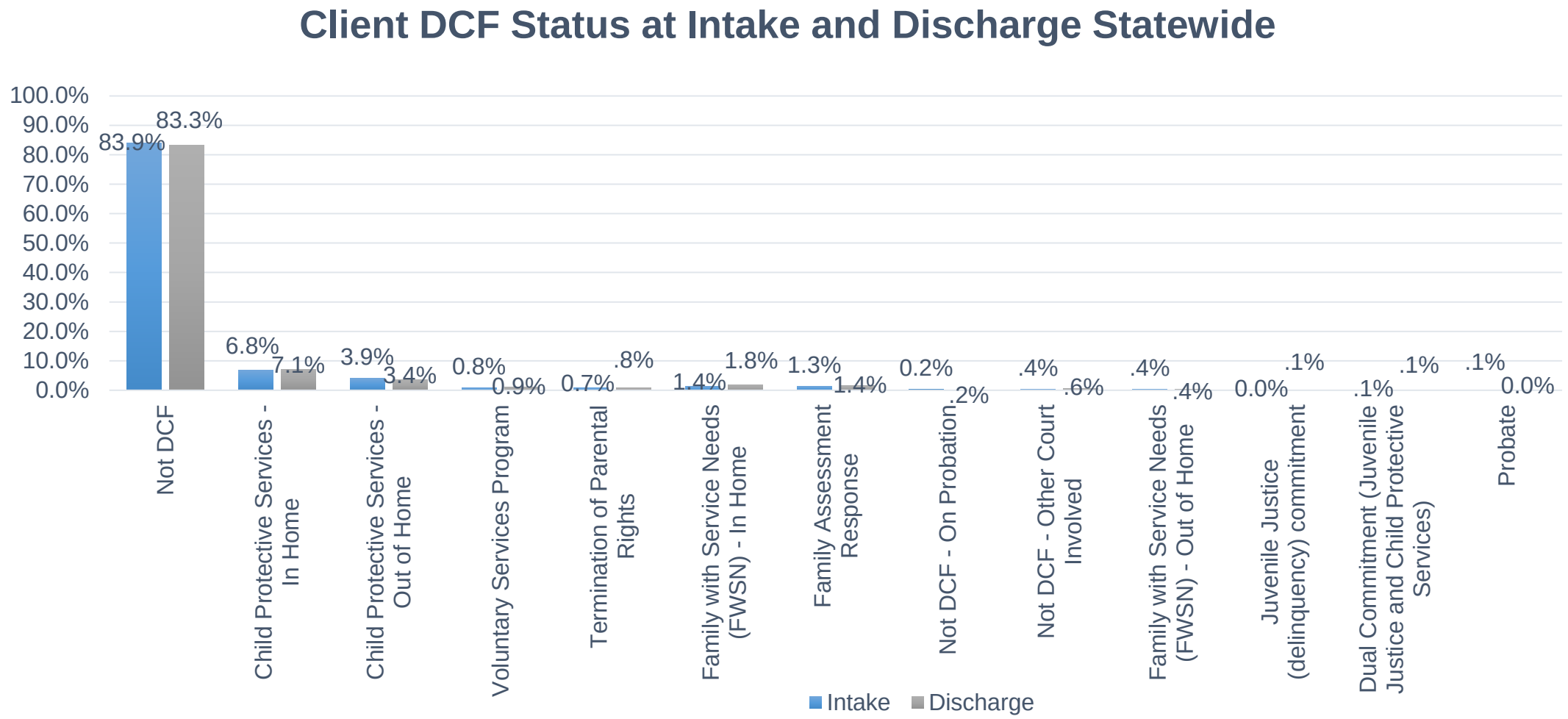


Hispanic/Latino Ethnicity

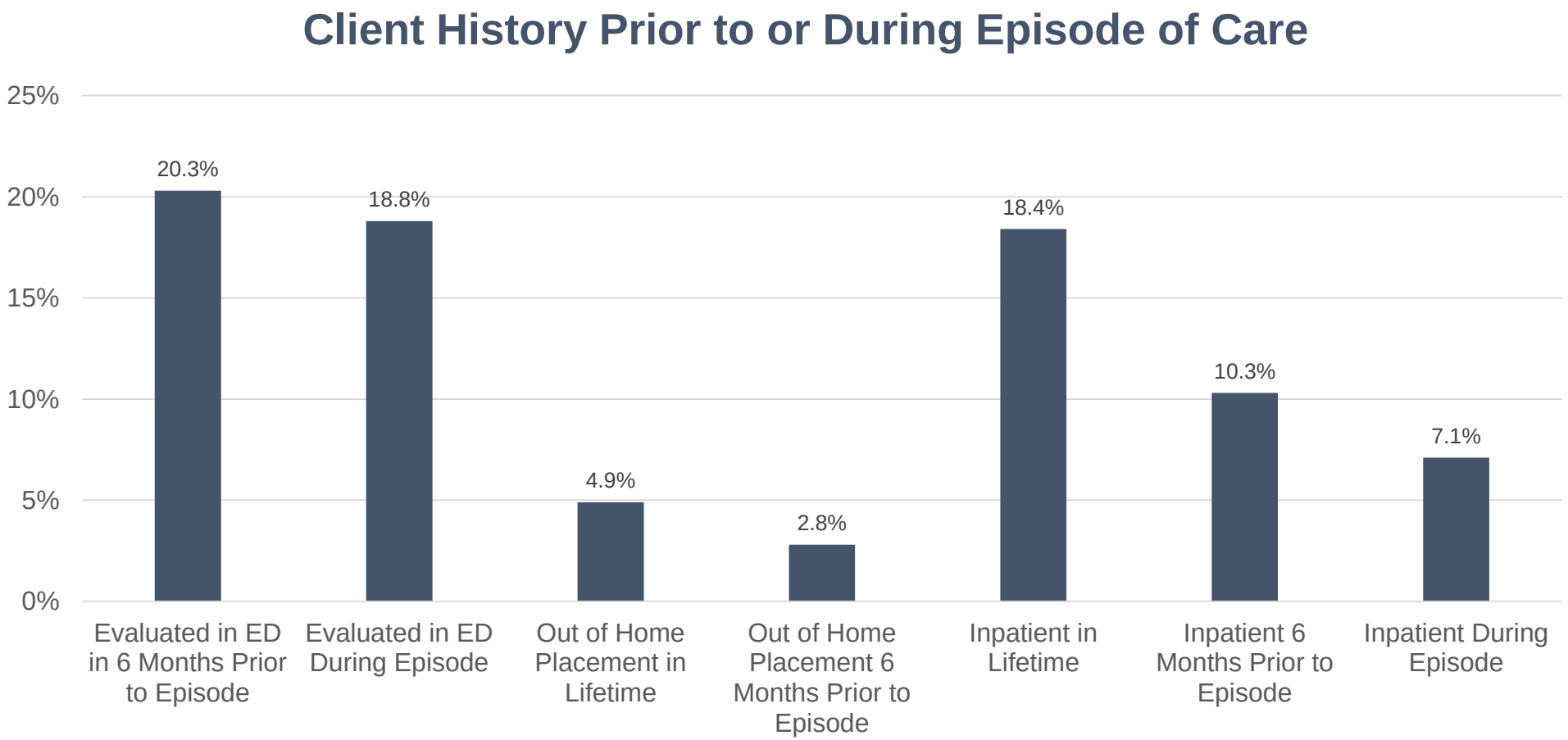


*Per question regarding sex assigned at birth.

Children Served in FY19 by DCF Status

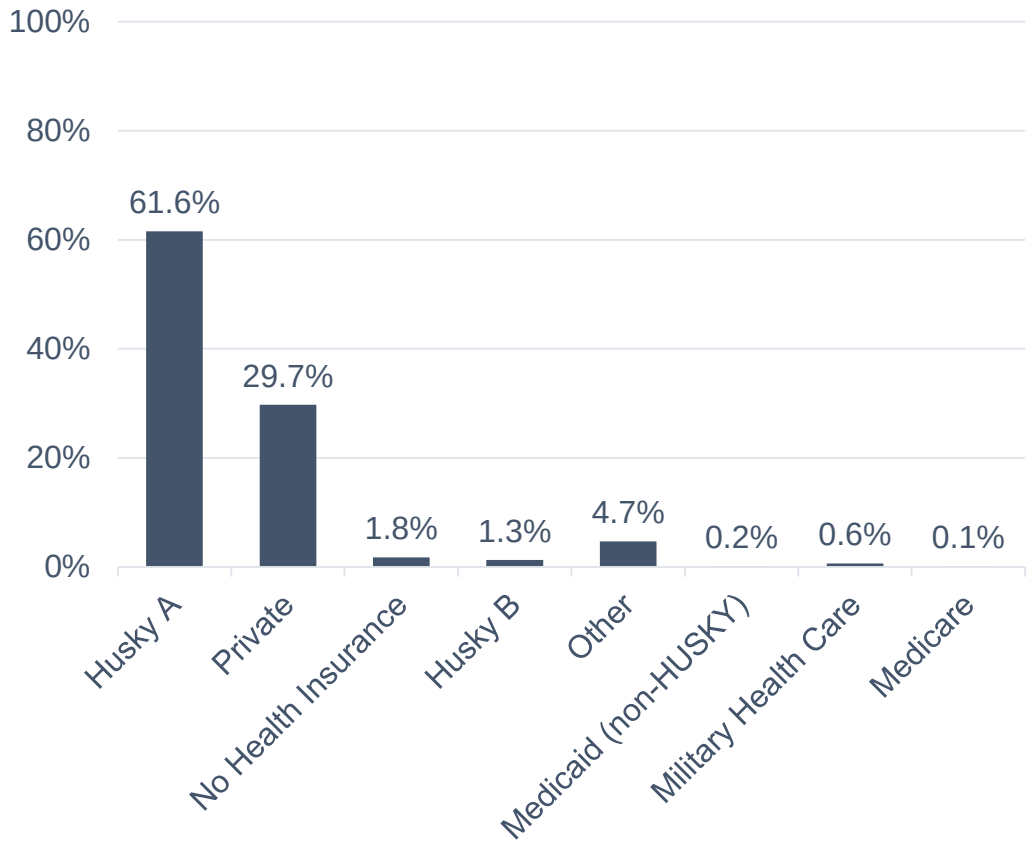


Client History FY19

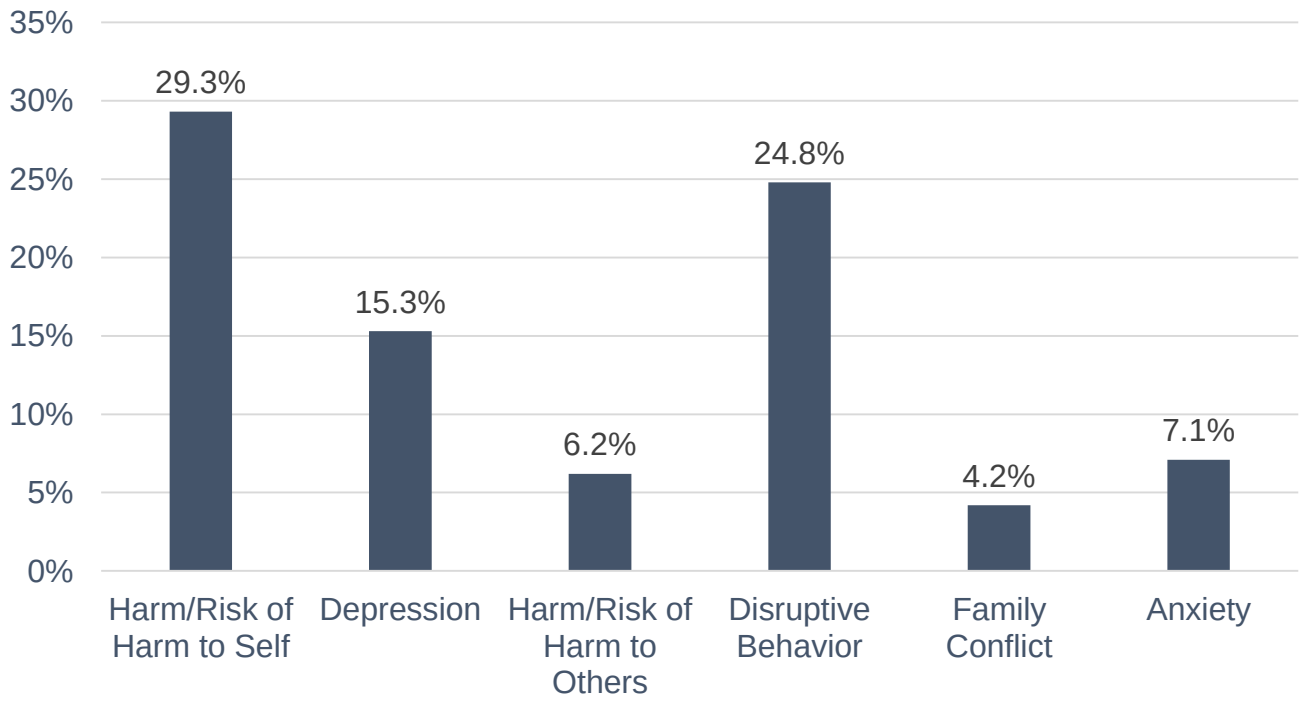


Children Served in FY19

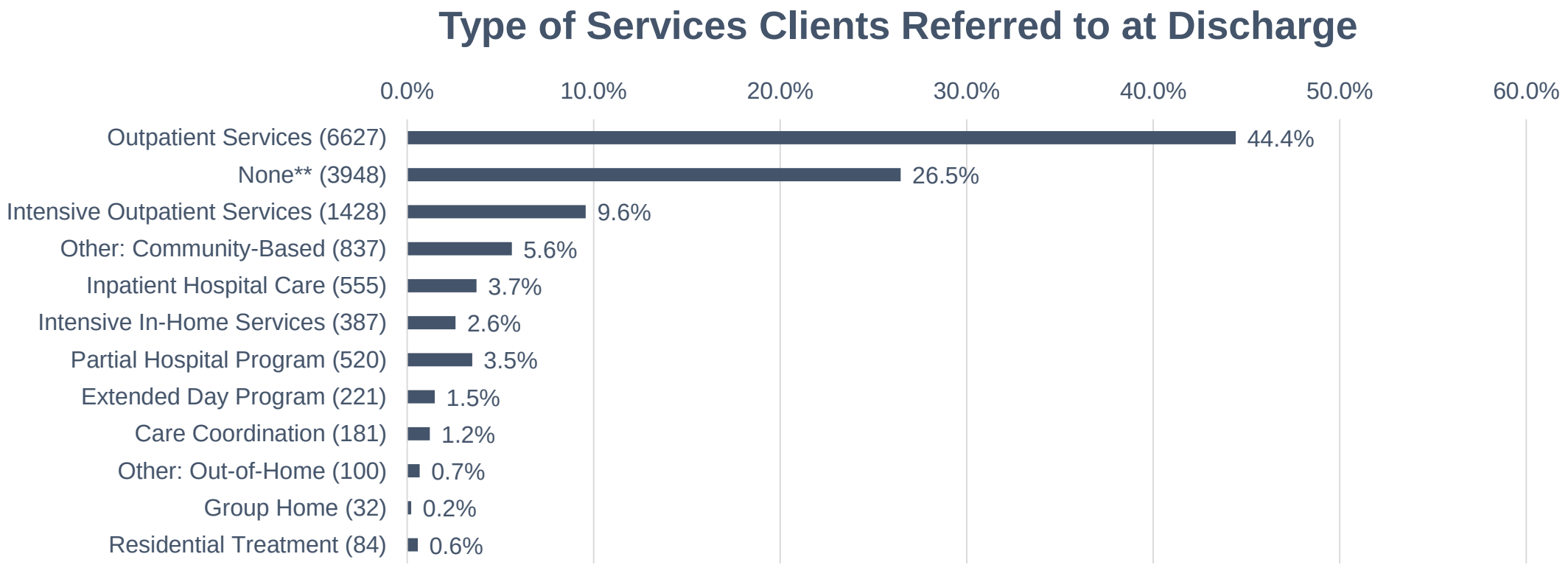
Type of Health Insurance at Intake



Primary Presenting Problem at Intake



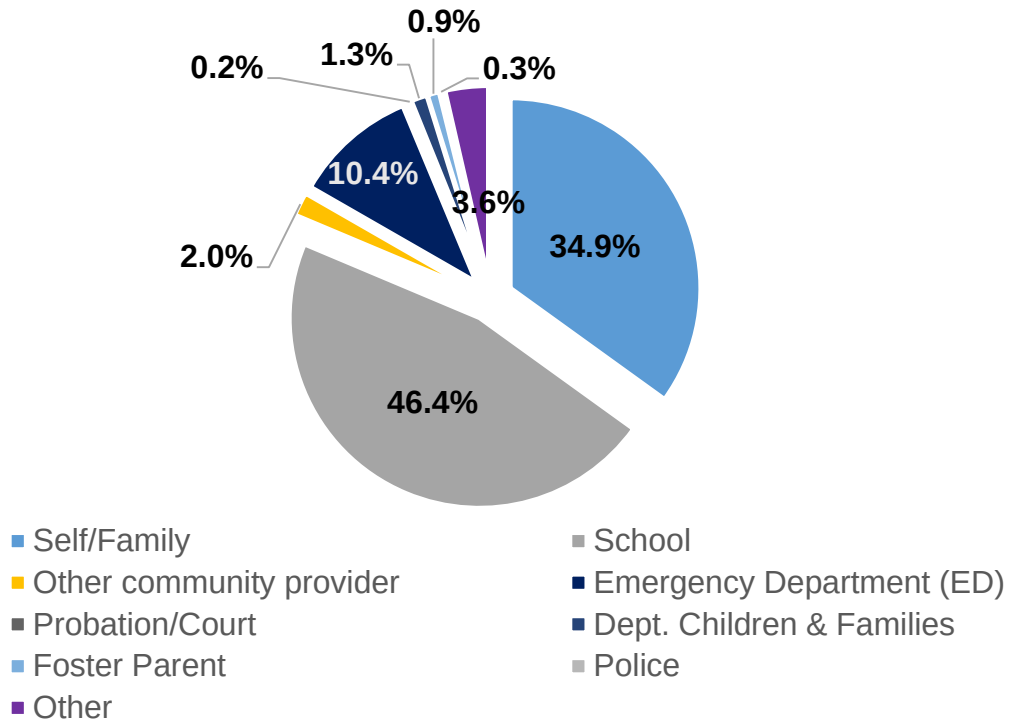
Referrals to Services at Discharge FY19



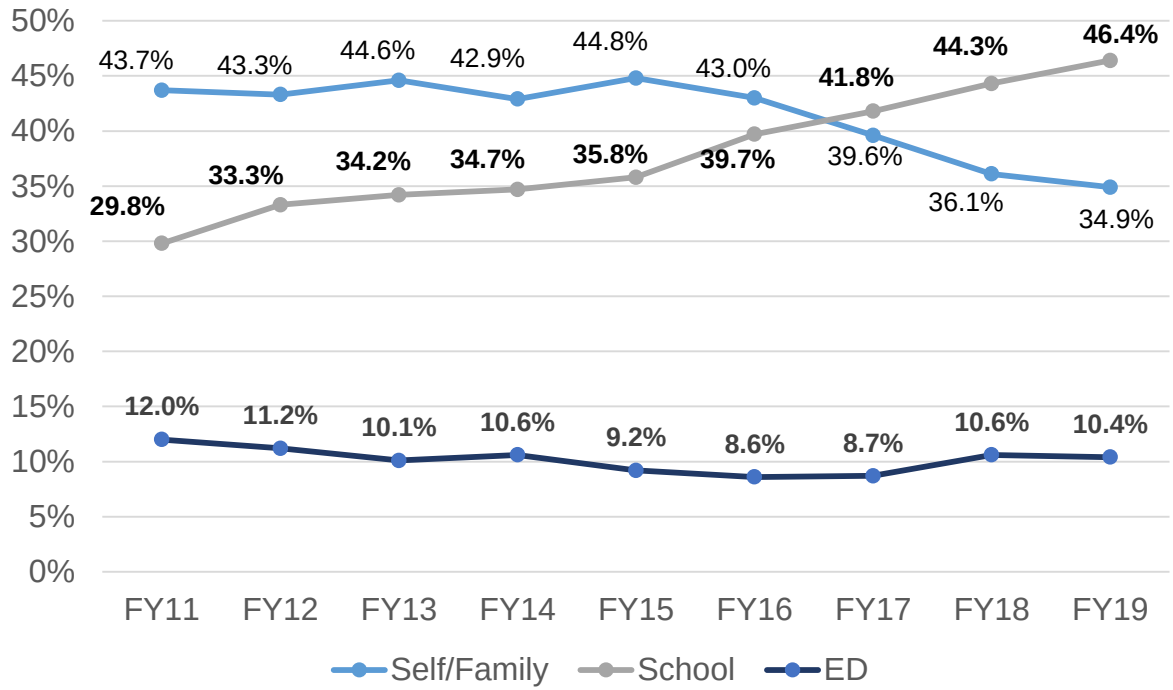
**Includes referrals back to client's existing provider/services.

Referral Sources FY19 and Over Time

Referral Sources FY19

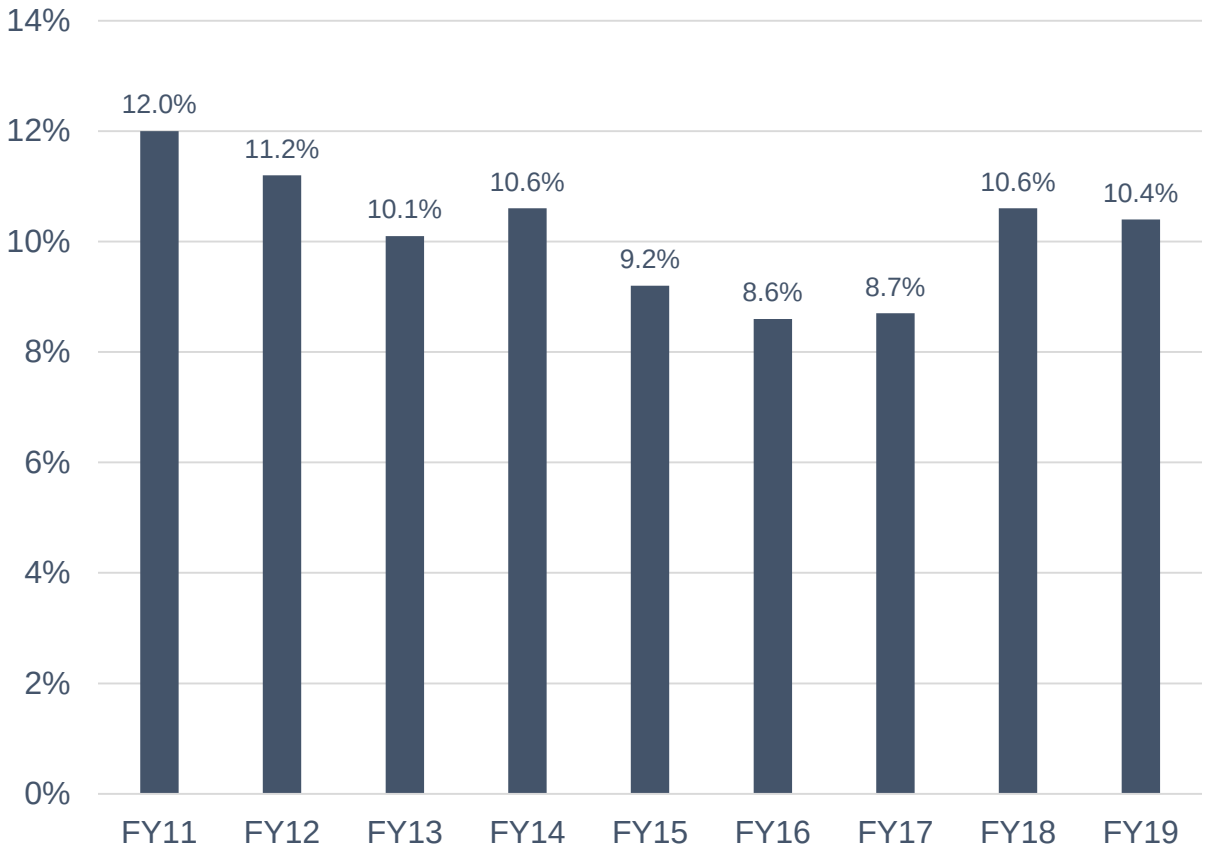


Top Referral Sources Over Time

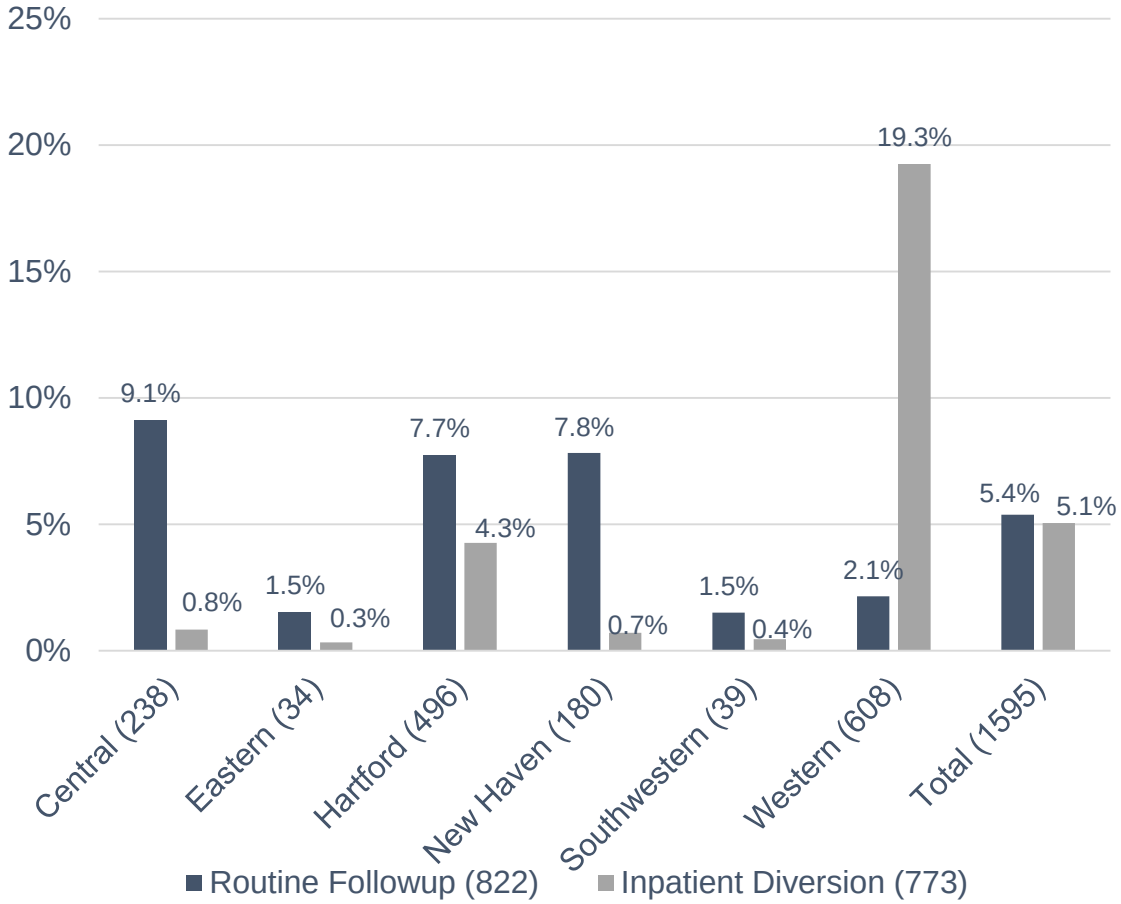


Emergency Department Referrals

ED Referrals Over Time

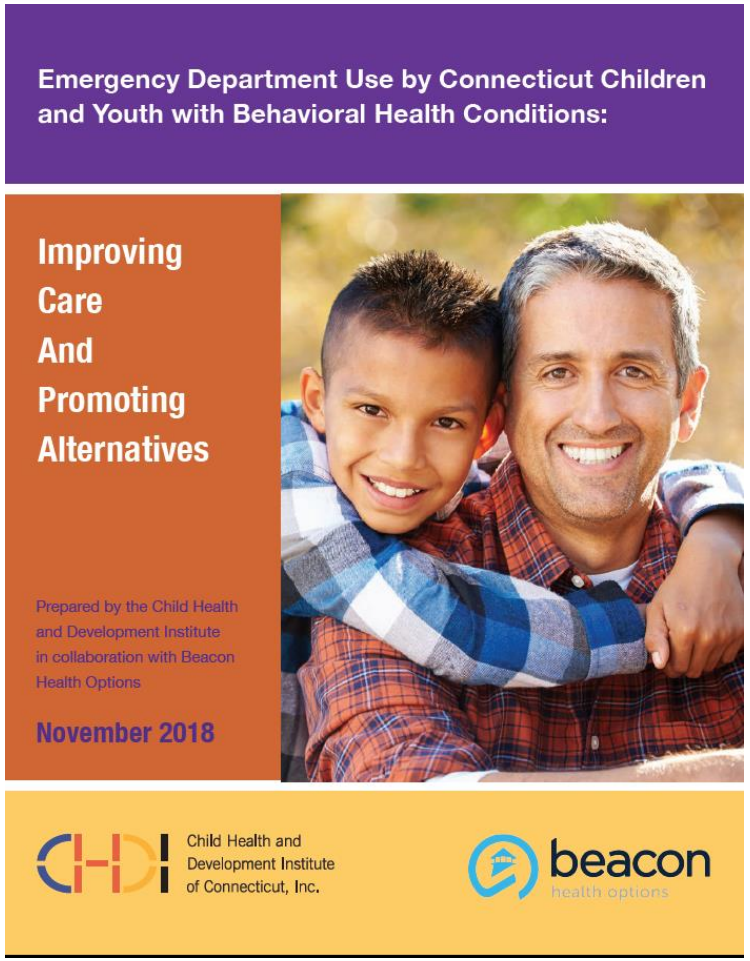


Type of ED Referral by Region FY19



ED Workgroup Report: Background

- Board members of the Children's Fund of Connecticut (CFC) & Child Health and Development Institute (CHDI) identified BHED as a priority
  - Board includes representatives from the state's two largest children's hospitals
  - Funded in the CFC FY2018 budget
  - Not legislatively mandated or funded by a state agency
- Beacon Health Options collaborated on data gathering, analysis, reporting and co-authored final report
- Collaborative and family-informed process was critical. A family champion and a parent with lived experience were paid consultants to the workgroup
  - Additional workgroup representatives included researchers and academics, community and hospital-based providers, legislators and agency representatives, school district staff, and more than 20 additional family members



ED Workgroup Report

Key Findings:

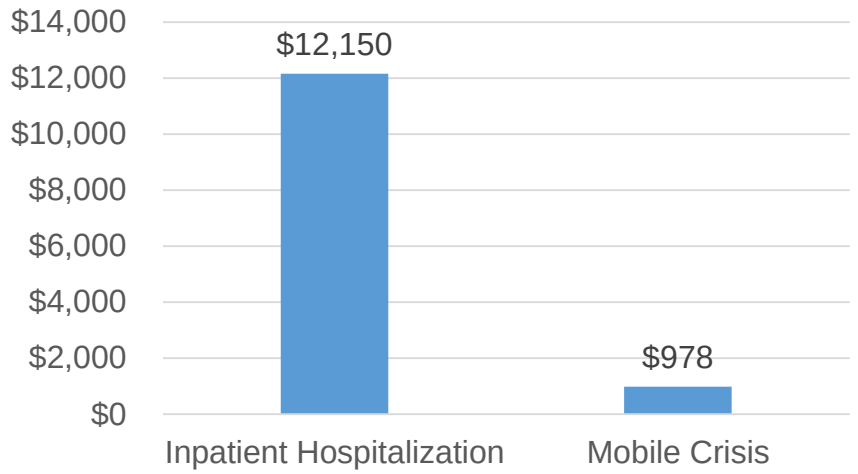
- This is a national phenomenon, not just Connecticut, and a systems issue, not just an ED issue
- **Most youth visited the ED only once or twice.** Very few were high utilizers
- Vast majority of youth with BHED visits are **not admitted to inpatient** unit
- Few youth receive significant BH interventions while in an ED and **35% did not have a follow up BH visit** in the community within 30 days of an ED visit
- **Opportunities for cost savings** if BHED visits (and overstays) can be reduced

Key Recommendations:

- Improve diversion and timely discharge from EDs by increasing collaboration and training among Mobile Crisis programs, EDs, and the schools
- Implement a quality improvement initiative focused on the delivery of behavioral health services within high volume ED settings serving children, youth, and families

Return on Investment

Mobile Crisis Averting from Inpatient Hospitalization



- **Total Cost of CT Mobile (FY18) = $14.126 M**
  Average cost per Episode of Care = **$978**

- **Cost of Alternative (Inpatient Hospitalization)**
  --Medicaid avg. per inpatient Episode of Care = **$12,150**

- **Averted Hospitalizations**
  --666 inpatient diversions in FY18, 483 for youth enrolled in Medicaid

- **Averted Costs to Medicaid = $5,396,076**
  --That represents 38% of total Mobile Crisis program costs and 4.3X Medicaid FFS expenditures

- Accounts for averted costs for Medicaid only, with additional costs averted for commercial payers

Return on Investment

Mobile Crisis and ED Diversion

- Mobile Crisis in CT is associated with a 25% reduction in ED utilization compared with initial ED users, over an 18-month timeframe
- Calculating Potential Return on Investments for diverting from EDs
- ED costs for youth showing up with primary BH concerns includes Medicaid and commercial claims, as well as the cost of uncompensated care

Impact of Mobile Crisis Services on Emergency Department Use Among Youths With Behavioral Health Service Needs

Michael Fendrich, Ph.D., Melissa Ives, M.S.W., Brenda Kurz, Ph.D., Jessica Becker, M.S.W., Jeffrey Vanderploeg, Ph.D., Christopher Bory, Psy.D., Hsiu-Ju Lin, Ph.D., Robert Plant, Ph.D.

Objective: Youths are using emergency departments (EDs) for behavioral health services in record numbers, even though EDs are suboptimal settings for service delivery. In this article, the authors evaluated a mobile crisis service intervention implemented in Connecticut with the aim of examining whether the intervention was associated with reduced behavioral health ED use among those in need of services.

Methods: The authors examined two cohorts of youths: 2,532 youths who used mobile crisis services and a comparison sample of 3,961 youths who used behavioral health ED services (but not mobile crisis services) during the same fiscal year. Propensity scores were created to balance the two groups, and outcome analyses were used to examine subsequent ED use (any behavioral health ED admissions and number of behavioral health ED admissions) in an 18-month follow-up period.

Results: A pooled odds ratio of 0.75 (95% confidence interval [CI]=0.66–0.84) indicated that youths who received mobile crisis services had a significant reduction in odds of a subsequent behavioral health ED visit compared with youths in the comparison sample. The comparable result for the continuous outcome of number of behavioral health ED visits yielded an incidence risk ratio of 0.78 (95% CI=0.71–0.87).

Conclusions: Using comparison groups, the authors provided evidence suggesting that community-based mobile crisis services, such as Mobile Crisis, reduce ED use among youths with behavioral health service needs. Replication in other years and locations is needed. Nevertheless, these results are quite promising in light of current trends in ED use.

Psychiatric Services in Advance (doi: 10.1176/appi.ps.201800450)

Chapter 08

Current Efforts

Current ED Interventions

- Daily ED Calls
- Daily Case Rounds with CCMC ED, DCF and Beacon
- ASD Intensive Response teams (CCMC and Yale EDs)
- Care Coordination and Family Peer Specialist Interventions
- Diversion efforts to CARES, MCS & SFIT
- Bed Tracking System Implemented in 2018
- Psychiatrist to Psychiatrist consultation available to both ED and IP Facilities
- MCS Program and expansions for DDS, facility liaisons and enhanced school outreach

Chapter

08

Alternative Services

Other Possible Strategies/Alternatives

ED Interventions
- Tx of Agitation
- Reduced R&S
- Initiation of active treatment
- Obs. Units
- Tx of SUD intoxication/withdrawal
- Early Disposition Planning
- More BH Staff

IP Interventions
- Early Disposition Planning
- Medication Adjustments
- Family Work
- Early engagement of community providers
- Network analysis and intervention

PRTF Interventions
- Early Disposition Planning
- Family Work
- Staff and family training in Behavioral Management

System Interventions
- Expand
  - Crisis Stabilization Beds
  - Brief/ Intermediate Units
  - In-Home Services
  - Inpatient Capacity
  - PRTF Capacity
  - SBDI
- New Approaches
  - BH Urgent Care
  - Crisis Now referral with GPS Tracking
  - School-based clinic crisis services

Chapter

09

Group Solutioning

Chapter

10

Final Recommendations

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health options

Questions and Discussion

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Thank you!