

# The Effects of Integrated Care on Hospital Utilization Patterns of the Seriously Mentally III

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### **Presenters**





Marie Mormile-Mehler, MSW, Vice President of Planning and Performance Improvement at Community Mental Health Affiliates (CMHA), has chaired the PBHCI Options to Health (O2H) interagency management team since project inception. As VP at CMHA for the past five years, she has been responsible for grants/program planning, quality assurance, accreditation, information services and technology and external relations.



**Fran Cersuolo**, LPN, has served as the project coordinator for the O2H program since its inception. Her many years of work experience within their hospital partner system in medical/surgical, crisis management, and psychiatry and case/utilization management helped to make the project a success.

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Christopher Steele, MS, is a 4th year MD/MPH student at the University of Connecticut and is currently applying to internal medicine residency programs. He completed this study for his MPH Internship program.





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# **Background**

- National trend data show increasing utilization of emergency department (ED) services for non-urgent care
- Increased use of the ED has been in part attributed to difficulties in accessing PCP care
- Increased ED utilization has led to over-crowding, longer wait times, reduced provider productivity, staff burnout, ambulance diversion, diminished quality of care, and higher health care costs

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# **Background**

- Persons with behavioral health problems are more likely to be frequent users of ED services
- Persons with SMI have higher rates of comorbid health problems, are less likely to access and receive quality care, and more likely to die prematurely
- Little research is available examining the effect of integrative primary and behavioral health care on hospital utilization

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# **Study Questions**

- Did hospital utilization patterns of SMI patients participating in the Options to Health (O2H) program change following enrollment in O2H?
- Did hospital utilization patterns vary by patient characteristics?
- How did changes in use of hospital services, including O2H, affect hospital costs?

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# **Study Design**

**Design**: Retrospective longitudinal study linking hospital use data up to 1 year before and after O2H enrollment with CMHA intake data

**Setting**: The Hospital of Central Connecticut (THOCC) and Community Mental Health Affiliates (CMHA) in New Britain, CT

**Study Population**: All CMHA SMI clients without a PCP and agreeing to participate in the O2H program (n=343)

 Service data abstracted from THOCC records and then merged with diagnostic and NOMS data from CMHA

Study Period:

April 2010 - January 2014

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# **Study Data**

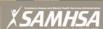
#### **THOCC Utilization Data:**

- Hospital services
  - Emergency Medicine
  - Inpatient Psychiatry
  - Inpatient Medicine
  - O2H Primary Care Visit
- Dates of service
- Length of stay
- Diagnosis: (ICD-9 Codes)
- Medicaid and Medicare cost data: Average costs & reimbursements per visit/day

#### NOMS/CMHA Data:

- Age
- Gender
- Race/ethnicity
- Psychiatric diagnosis
- Self-reported health status
- Physical health indicators
- Client status
  - · Residential vs Outpatient
- Insurance

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Demographic Profile of O2H Clients							
Age		Psychiatric Diagnosis					
Mean	43.4 yrs.	Bipolar Disorder	25%				
Sex		Generalized Anxiety	19%				
Male	55%	Major Depression	27%				
Female	43%	PTSD	19%				
Race/Ethnicity	•	Schizophrenia	31%				
Black	17%	Other					
Hispanic	34%	Smoker	62%				
White	62%	Medicaid insurance	97%				
Residential Client	t 19%	Medicare insurance	33%*				
		*96% of these clients had combined Medicare and Medicaid Insurance.					
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#### SAMHSA-HRSA Center for Integrated Health Solutions **Number of Hospital Visits Before and After Patient Enrollment in O2H Year After** Type of **Year Before** Statistical **Hospital Visit** O2H O2H Significance **Enrollment Enrollment** (p-value) **Emergency** Department 821 645 0.01 Inpatient Medicine 23 32 0.20 Inpatient Psychiatric 47 40 0.49 www.integration.samhsa.gov

# **Subgroup Analysis**

- Statistically significant decreases in ED visits were found for:
  - Males
  - Smokers
  - · Patients with Generalized Anxiety Disorder
  - Patients with Major Depressive Disorder
  - · Clients not living in residential homes
  - Black/African Americans (trend, p=0.07)
- No statistically significant changes were found in the number of inpatient medicine or psychiatric admissions or length of inpatient stay for any subgroup.

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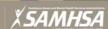
# Hospital Utilization Before and After O2H Enrollment: Residential vs Outpatients

Client Status	Emergency Department Visits		Inpatient Medicine Length of Stay		Inpatient Psychiatric Length of Stay	
	Before	After	Before	After	Before	After
Residential	133	134	8	21	236	299
Outpatient	688	511*	68	82	441	159**

\*p=0.002

\*\*p=0.06

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# Hospital Use by Self-Reported Health

- Patients who reported their health as poor (20%):
  - > Were less likely to visit the O2H clinic compared to those who reported better health at intake
  - > Had no change in number of ED visits
  - > Were the only group who had an increase in inpatient medicine admissions



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# **Preliminary Hospital Cost Estimates** for Medicaid Patients (n=331)

			,				
Type of Visit	# Visits or Days Before O2H Enrollment	# Visits or Days After O2H Enrollment	Change in Utilization	Profit Margin per Visit/Day	Total Net Profit/Loss		
O2H Clinic	0	1281	1281	-\$135.34	-\$173,370.54		
Emergency Department	813	625	-188	-\$47.07	\$8,849.16		
Inpatient Medicine	76 days	102 days	26 days	-\$844.85	-\$21,966.10		
Inpatient Psychiatric	672 days	449 days	-223 days	\$329.59	-\$73,498.57		



#### Limitations

- Lacks a complete comparison group
- Small sample sizes for some subgroups (e.g., Blacks) limit the ability to see a significant change
- Unable to determine if patients were utilizing other area hospitals or urgent care services either before or after enrolling in O2H

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# **Summary and Discussion**

- Clients who enrolled in the O2H integrated care program experienced a statistically significant decrease in ED utilization
- Certain subgroups of clients were more likely to decrease their ED use, including: men, smokers, those with anxiety and depressive disorders, and those who are not residential clients
- Those in poor health were more likely to have inpatient admissions for medical conditions

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# **Summary and Discussion**

- Medicaid and Medicare are the primary payers for hospital care for SMI patients
- Due to these payment mechanisms for communitybased hospital care, changes in utilization by the SMI population <u>may</u> not be associated with cost savings to the hospitals
- Further research needs to be done to determine the independent effects of integrated primary and behavioral health care on hospital utilization and the cost impacts

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