



## ***The Impact of Case Management on Independence and Employment***

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# Context



- ▶ Texas has the highest rate of uninsured working adults in the nation (28%)
- ▶ Large county hospital districts often care for those without insurance
- ▶ 250,000 working age Texans with disabilities receive SSI and 380,000 receive SSDI (2007)
- ▶ Medicaid expenses for working age Texans = \$3.5 billion (2007)

# Study Design



- ▶ Harris County Hospital District in Houston, TX
- ▶ 1,616 participants: 904 intervention and 712 control
- ▶ Working adults < 60 yrs. enrolled in Harris County indigent healthcare program
- ▶ Interventions
  - ▶ Free health and behavioral healthcare, prescriptions, dental care
  - ▶ Empowerment-oriented case management by vocational counselors, social workers and nurses
    - ▶ Planning, advocacy and coordination
    - ▶ Navigation of health system
    - ▶ Connection to community resources
    - ▶ Employment/vocational supports

# *Who Is Working Well?*



- ▶ Female (76%),
- ▶ Minority (72%)
- ▶ Middle-aged (70% > 45 yrs)
- ▶ Divorced / separated (42%)
- ▶ High school diploma (33%) or less (30%)
- ▶ Low income (48% < 100% of poverty)
- ▶ Work on average 33 hours per week
- ▶ About 10% have a serious mental illness
- ▶ 41% report at least one functional limitation (ADLs and/or IADLs)
- ▶ Frequent self-reported health conditions include depression (51%) and anxiety (32%)

# Participant Data



- ▶ 92% of original sample completed last survey (833 participants)
- ▶ Data sources:
  - ▶ Surveys covering months 1 to 18 in the study (self-report data)
  - ▶ Medical encounters from HCHD records
  - ▶ Pharmacy data from HCHD records
  - ▶ Employment data from the Texas Workforce Commission

# Case Manager Data



- ▶ 15 case managers participated
- ▶ Average of 56 participants per case manager
- ▶ Case managers completed daily activity reports
- ▶ Activities were aggregated to three measures of time

<b>Case Manager Activity over 6 month period</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
Health Related Hours	2.9	2.3	0	26.2
Employment-related Hours	0.9	1.6	0	20.7
Other-related Hours	3.8	2.7	0	14.1

# Key Questions



- ▶ Is there a relationship between case management and participants' outcomes after adjusting for other factors?
- ▶ Are very high levels of case management related to participants' outcomes?

# Analysis



- ▶ Results cover the first 18-months period of our study
- ▶ Outcomes were adjusted for: Age, Gender, Race/Ethnicity, Serious Mental Illness status, Occupational Group, Health morbidity index (ACG score) and Recruitment Cohort (Mail/Phone versus Clinic In-person)
- ▶ Baseline value was included to adjust for initial score
- ▶ Were some case managers more effective than others?
- ▶ Linear relationships can represent a positive outcome or a potential higher need for assistance
- ▶ Curvilinear relationships were added to test whether sufficiently high levels of case management hours were related to positive participants' outcomes

# Health Care Utilization Results



## Higher case management hours were related to:

- ↑ outpatient physical health services (*HCHD data*)
- ↑ requests for routine medical appointment\*
- ↑ seen in a mental health treatment location (*HCHD data*)
- ↑ utilizing mental health services\*

## Very high case management was related to:

- ↓ total emergency room visits (*HCHD data and self-report*)
- ↓ outpatient visits (*HCHD data*)
- ↑ urgent care visit\*
- ↑ at least one outpatient and emergency visit (*HCHD data*)

***\*Note: Outcome is based on participant self-report***

# ***Physical and Behavioral Health Results***



## **Higher case management hours were related to:**

- ↓ overall mental and physical health functioning\*
- ↓ reporting no difficulties in instrumental activities of daily living\*

## **Very high case management hours were related to:**

- ↑ self ratings of physical and mental health functioning\*
- ↑ probability of reporting difficulty with depression and activities of daily living\*

***\*Note: Outcome is based on participant self-report***

# Employment and Earnings Results



## Higher case management hours were related to:

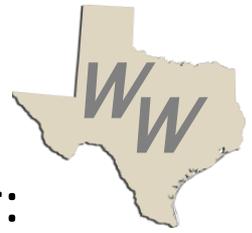
- ↓ hours worked over the past six months\*
- ↓ months worked over the past six months\*
- ↓ household income\*
- ↑ percent reporting problems with work due to physical or mental health\*

## Curvilinear Relationships - Very high case management was related to:

- ↑ Texas Workforce Commission reported earnings
- ↑ number of months worked in the past six months\*
- ↑ working the same or more as the previous six months\*

***\*Note: Outcome is based on participant self-report***

# Summary



- ▶ Higher case management hours were related to greater:
  - ▶ HCHD community clinic-based outpatient and mental health care utilization which indicates greater access to services
  - ▶ participant need in health, daily functioning and employment consistently--reflecting case managers spending more time with participants who had higher needs
  
- ▶ High levels of case management were consistently related to positive participants' outcomes:
  - ▶ increased appropriate usage of healthcare (lower ER usage)
  - ▶ Increased earnings, and
  - ▶ Increased mental and physical health functioning

# *Case Manager Random Effects*



- ▶ Across all outcomes, variation due to having a particular case manager was not statistically significant.
- ▶ Even though case managers had different backgrounds and experience, little impact on participant outcomes was identified.
- ▶ High levels of case management were effective irrespective of case manager

# Case Managers Report



- ▶ Most CM time was spent navigating the healthcare system-- especially obtaining medical and dental appointments
  - ▶ Significant time was spent counseling participants and teaching greater assertiveness with their healthcare and employment
  - ▶ Communicating with healthcare providers through electronic medical records was useful
  - ▶ Challenges:
    - ▶ Maintaining contact with participants (very mobile population)
    - ▶ Establishing rapport and engaging participants
    - ▶ Focusing time on participants who are motivated to change
    - ▶ Balancing offering assistance with promoting self-sufficiency
    - ▶ Building relationships with community support providers
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# Case Manager Strategies



- Effective engagement strategies include:
  - Using motivational interviewing, reflective listening, and insight induction;
  - Providing supportive counseling, vocational assistance and referrals to community resources;
  - Facilitating communication with the health care team; and
  - Encouraging participants to be more proactive (empowered) in managing their health and employment.

# *Participant Intervention Needs*



- ▶ A survey of the 15 case managers showed that the interventions most needed by participants include (in order of importance):
  - ▶ Expedited medical appointments
  - ▶ Prescription assistance
  - ▶ Dental services
  - ▶ Vocational services
  - ▶ Mental health care
  - ▶ Medical care
  - ▶ Specialty care

# Participants Speak



- Additional interviews were conducted during the 18-month period.
- Participants report that navigation assistance (via case management), lack of co-payment requirements for services and improved access to specialty services (such as psychiatry) are improving their lives.

*“Access to mental health care was the most helpful service because without the psychiatrist and changes in medications and support from my CM, I don’t think I would be around, or at least not doing as well as I’m doing.”*

- Greater access to services has enabled patients to deal with health issues more promptly

*“The expedited appointments was most beneficial. My CM was able to get me appointments that helped get me treated and my health improved greatly because I was able to get the help I needed.”*

- Case manager services have helped them

*“The assistance I got from the CM was very important to me because at the present time I am better informed about my medical condition and I am more proactive in my health care.”*

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## *Participant Example*

Participant had total case management hours greater than the 90<sup>th</sup> percentile value.

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# Implications



- ▶ Health navigation interventions can improve patient outcomes
  - ▶ High levels of case management may be required to have desired impact on patient health and employment outcomes.
  - ▶ Health navigation will also need to address psycho-social needs
  - ▶ Use of case management could be targeted to those with highest healthcare utilization to try to make the biggest impact on reducing inappropriate utilization of health system resources.
  - ▶ More time for study would better identify long-term disability outcomes.
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