NI CH
Novel Interventions in Children’s Healthcare

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Collaborative with CareOregon

- Intensive behavioral health care
- Youth with complex medical conditions
  - Birth → 21 yo
- Poor adherence with treatment
- High utilizers of unnecessary medical care
  - Repeat hospitalizations for diabetes
  - Repeat emergency visits for recurrent pain

Evidence-Based Treatment

- Empirical Support
  - Behavioral Family Systems Therapy (BFST), Robin and Foster, 1999
  - Family-based problem solving
  - Several federally/foundation grants demonstrating efficacy & effectiveness

- Theoretical Underpinnings
  - Multisystemic Therapy (MST), Henggeler and Hanson
  - Context-driven behavior
NICH Intervention

- 24/7 therapeutic support
- BFST – family-based problem solving
- Pragmatic & systematic behavioral intervention
- Care coordination
  - Medical
  - Social services
  - Community mental health
  - School
- School consultation
- Employment, social and life skills coaching

Where the Rubber Meets the Road

- Joining, engagement & “buy in”
  - Family has been marginalized by the healthcare system
- Understanding context & challenges
- Establishing clarity for family and determining a direction and next steps
- Paying attention to and reinforcing “small wins”
- Serving as care ambassador
- Assist in re-engaging with care
- Titrating services and support in independent management and problem solving

Delivery of Care

- Inpatient
- Clinic
- Telehealth
  - Skype
  - Text
  - Phone
- Home visits
- School visits
- Care coordination
NICH Diagnoses
January – September 2012

- Cystic Fibrosis
- Chronic Pain
- Diabetes
- Cancer
- Recurrent Abdominal Pain
- Chronic Renal Disease

Economics of NICH

- Hospital Care averages $2800/day (2010)
- Avoidable hospitalizations cost insurance companies
- Inpatient $ increased 31% above inflation past 20 yrs
  - > 60% for those with complex conditions
- Examples:
  - DKA - $11,000
  - CF "clean out" - $40,000

Without intervention likelihood of repeated hospitalizations increases

Case 1

- 9 yo diagnosed with brain tumor, in remission
- Referred by Coping Clinic for unexplained neuropathic right leg pain
  - Extensive testing performed
  - Presented to clinic in a wheelchair
- 16 days absent from school across 2 months
- 3 emergency department visits in 2 months
- 1 admit
NICH Intervention

- Coordination with Pain team & PCP
- 2x/week BFST across 2 months in-home
- 24/7 therapeutic support and phone check-ins
- School consultation
- Pain management
  - Progressive muscle relaxation
  - Deep diaphragmatic breathing
  - Cognitive reframing of pain
  - Distraction
  - Re-initiation in school and physical activities

Case 1 Outcome

- 3 ED Visits Admitted
- Pre-NICH, NICH, Last 4 months

Case 2

- 14 yo with Type 1 Diabetes
- Living with mother and 3 siblings
- 8 DKA episodes requiring hospitalization over 8 months
- Poor supervision at home
- 7 months out of school
- Crisis at home
- Endocrinologist believed insulin resistance resulting from reported traumatic event
NICH Intervention

- Collaboration with PCP, endocrinologist & DHS
- Weekly family therapy
- Daily phone contact
- 24/7 therapeutic support
- Crisis intervention and planning
- DHS report
- Removal from mothers care, placed with aunt
- Education, support and problem solving
- Incentive for daily reporting of glucose readings
- School consultation–
  - Initiation of IEP and tutoring service

Case 2 Outcome

Case 3

- 17 yo with Type 1 Diabetes & Celiac Disease
- Living independently in mothers home, mom at the coast with boyfriend
- Inconsistent school attendance
- DHS involvement
- 3 DKA events in 8 months
NICH Intervention

- Coordination with PCP, endocrinologist, DHS case worker
- Facilitated move to aunt’s home
- Skype BFST sessions weekly
- 24/7 therapeutic support
- Incentive for sending glucose readings
- School consultation and re-engagement
- Summer planning

Case 3 Outcome

![Case 3 Outcome Graph]

Case 4

- 19 yo diagnosed with leukemia at 17
- Received a bone marrow transplant - April 2011
- Developed GVHD, pulmonary embolism, pulmonary hypertension, some cardiac problems, deconditioning due to obesity
- History of non-compliance with treatment recommendations, including medication and non-pharmacological interventions
- History of sexual abuse, meets criteria for Borderline Personality Disorder.
**NICH Intervention**

- Collaboration of NICH and Hem/Onc department
- Combined medical and behavioral plan
- Behavioral guidelines alert in EPIC for ED and Inpatient/Outpatient
- Implementation of pragmatic behavioral intervention
  - arrive to Hem/Onc clinic visits on-time (9 am)
  - call with symptoms before presenting to ED
  - schedule clinic visit if symptoms appear
  - enroll in Portland DBT program
- Compliance with this plan = Pediatric Hem/Onc care at DCH, otherwise adult medical services
- 24/7 therapeutic support & crisis intervention
- Employment and life skills coaching

**Case 4 Outcome**

![Graph showing ED visits and admissions before and after NICH intervention.]

**Case 5**

- 14 yo Type 1 Diabetes and Hypothyroidism
- History of poor management of diabetes
- Referred by endocrinologist
- A1C historically high (11-14)
- 3 DKA events in 1 year
NICH Intervention

- Collaboration with PCP & endocrinologist
- Weekly BFST over Skype
- Incentive for reporting normal glucose readings
- 24/7 therapeutic support
- Crisis plan and intervention
  - Call when readings are high
  - Support in following recommended medical treatment
  - Consult with endocrinologist
  - Support in decision making regarding ED visit
- Successfully avoided 2 ED visits

Case 5 Outcome

Aggregate NICH Data
January – June 2012
Future of NICH

- 17 CareOregon patients enrolled since Jan 2012
- 29 patients total
- Average case load 12-14 patients
- Currently serving – Multnomah, Marion, Polk, Douglas and Coos counties
- Developing NICH as part of CCO model for high-risk patients
- Adaptation of treatment model to serve other populations-
  - Obesity
  - Mental health emergencies in the ED and PICU

Familys’ Advice for Medical Professionals

- Behavior as Adaptive
  - Survival skills:
    - ED manages crisis
    - Hospital is safe and predictable
  - Predictable & stable context:
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