

# Residency Education in Preparing for Transition to Adult Care:

## Results from a Pilot Study at USF Health

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# Learning Objectives

1. Describe the role of primary care physicians in supporting health care transition (HCT).
2. Identify strategies to prepare adolescent patients for an adult model of care.
3. Describe considerations and challenges in implementing a new clinical protocol for transition preparation.

# Dissertation Presentation

- Background
- Research Overview
- Quantitative Phase
- Qualitative Phase
- Conclusions and Implications

# Background

# Definitions

- Adolescents and Young Adults(A/YA)
  - Individuals ages 12-21+ with and without special health care needs
- Children and Youth with Special Health Care Needs (C/YSHCN)
  - Those “who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally.”
  - YSHCN operationalized as ages 12-17 in the National Survey of Children with Special Health Care Needs

# Definitions

## Health Care Transition (HCT)

The “purposeful, planned movement of adolescents and young adults with chronic physical and medical conditions from child-centered to adult-oriented health care systems.”

Blum, 1993



“The goal of a planned health care transition is to maximize lifelong functioning and well-being for all youth, including those who have special health care needs and those who do not.”

AAP/ACP/AAFP, 2011

## Transition Preparation

Increased responsibility for health care self-management; understanding and planning for changes in health needs, insurance, and providers in adulthood; should occur **across** ages 12-21+



## Transfer of Care

Discrete event, physical transfer from a pediatric to an adult provider; should occur **between** ages 18-21+

# Definitions

- Maternal and Child Health Bureau (MCHB)
  - Federal agency with primary responsibility for developing systems of care for C/YSHCN
- Med-Peds Physician
  - Primary care physician who is board certified in both Pediatrics (child-oriented) and Internal Medicine (adult-oriented)
- Graduate Medical Education (GME)
  - Pediatrics and Med-Peds Residency Programs

# Public Health Problem

- Transition to adult life is important focus area
  - Almost 20% of adolescents aged 12-17 have SHCN
- Numerous HCT policy papers and statements from professional organizations
- MCHB identified HCT as one of 6 core outcomes for C/YSHCN
- HCT objective in HP 2020
- Clinical Report on HCT in *Pediatrics* (2011)

# Knowledge Gap

- GME in HCT identified as essential need
  - Pediatricians do not routinely/adequately address HCT
  - HCT training beginning to be introduced in residency programs
  - Some research on resident preferences in HCT curricula
  - No published studies on effective teaching models
  - No residency programs that incorporate new transition guidelines for all A/YA

# Research Overview

# Purpose

To assess, using a concurrent mixed methods research design, the impact of an educational intervention to teach residents how to prepare A/YA for transition to adult care.

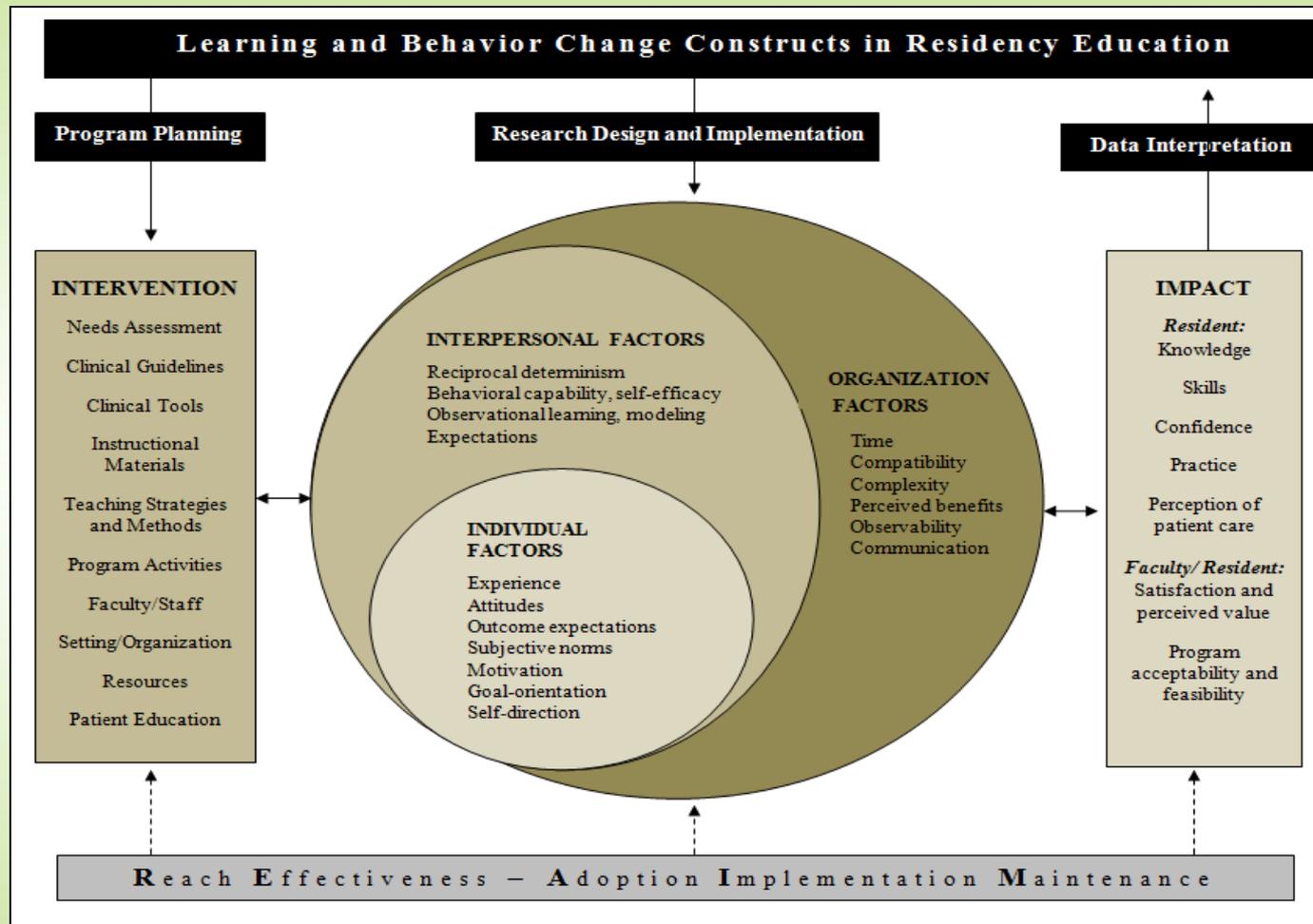
# Study Population

- Pediatric and Med-Peds Residents at USF Health in 2012-2013
  - 50 Pediatric residents
  - 17 Med-Peds residents
  - 67 Total

# Research Questions

1. To what extent did the intervention facilitate change in HCT knowledge, confidence and experience?
2. Were there differences in change among subgroups of residents, e.g., Pediatrics versus Med-Peds program, year of residency? What factors influenced change?
3. How did residents and faculty perceive HCT?
4. What were the perceived value, relevance and acceptability of the intervention?
5. How can the model be improved?

# Conceptual Model



# Pilot Intervention

- USF Pediatrics developed a pilot educational intervention
  - Launched in June 2012, implemented over 9 months
- Used a stepwise quality improvement approach
- Focus on transition *preparation* services
- Emphasizes use of electronic health records (EHR) as an experiential learning strategy
- Implemented with full cohort of 67 residents

# Intervention Logic Model

| Structure  | Process   | Short Term Impact  | Long Term Outcomes   | Public Health Goal  |
|--|---|--|--|---|
| <p><b>Individual Factors:</b><br/>Previous HCT experience and training</p> <p>Residency Program (Peds, Med-Peds)</p> <p>Year of residency</p> <p><b>Educational Factors:</b><br/>Needs assessment</p> <p>Program design and strategies.</p> <p>Instructional materials and tools based on AAP/AAFP/ACP clinical guidelines.</p> <p>Knowledgeable faculty and program staff</p> <p><b>Organizational Factors:</b><br/>Department, residency program support</p> <p>Training resources</p> | <p><b>Activities:</b><br/>Introductory didactic lecture at resident and faculty meetings</p> <p>Lecture video materials and resources posted online</p> <p>★ EHR tasks and prompts in continuity clinics</p> <p>Modified GAPS screener</p> <p>Patient handouts: modified Bright Futures visit summary, FloridaHATS materials</p> <p>Series of provider briefs with HCT tips and resources</p> <p>Evaluation through self-report survey and chart review</p> | <p><b>Learner Objectives:</b><br/>Increased resident knowledge, confidence, skills</p> <p><b>Performance Objectives:</b><br/>EHR utilization</p> <p>Change in resident behavior/practice</p> <p>Perception of improved patient care</p> <p>Resident satisfaction with program</p> <p>Faculty satisfaction with program</p> | <p>Commitment from department to continue program</p> <p>Improved health services/ patient care</p> <p>Improved patient satisfaction with resident care</p> <p>Regional/national adoption of program</p> | <p>Pediatricians will better facilitate smooth transition to adulthood for their patients.</p> <p>Adolescents and young adults will be better prepared to navigate the adult health care system. This will result in reduced episodes of disease complications; increased knowledge and skills for disease self-management, independent living, inclusive participation in the community, and achieving educational and vocational goals; and increased access to necessary adult-based health care and related services.</p> |

# HCT Preparation Tool in EHR

## **Health Care Self-Management/Transition: 15-17 years**

Patient can describe how his/her chronic conditions (if any) impact their health. *(yes/needs help/no)*

Patient can describe how his/her medications (if any) impact their health *(yes/needs help/no)*

Patient can take his/her medications (if any) without supervision. *(yes/needs help/no)*

Patient has tried to refill a medication *(yes/needs help/no)*

Patient has scheduled a doctor's appointment on his/her own *(yes/needs help/no)*

Patient meets with provider without parents/caregivers present (for part of visit) *(yes/no)*

Patient is keeping his/her own health care summary *(yes/needs help/no)*

Patient knows source of own medical insurance *(yes/needs help/no)*

Patient/family are investigating adult doctors for both primary and specialty care *(yes/needs help/no)*

Patient/family are investigating secondary education or vocational opportunities *(yes/no)*

Patient has received "10 Steps to Successful Health Care Transition" handout *(yes/no)*

### **For YSHCN:**

Family has begun Voc Rehab application *(yes/no/NA)*

Family has begun guardianship applications (by age 17) *(yes/no/NA)*

Transition IEP includes health care transition goals/activities, such as health care self-management *(yes/no/NA)*

Patient has applied for APD/ Medicaid Home and Community-Based Waiver *(yes/no/NA)*

Subspecialty Provider Contacts: *[type text here]*

# Research Design

| Quantitative Phase  | Qualitative Phase  |
|---|--|
| Measure intervention effect on resident knowledge, confidence, and experience   | Assess intervention acceptability and feasibility  |
| Manuscript 1:<br><br>Residency Education in Transition Preparation for Adolescents and Young Adults: A Quasi-Experimental Pilot Study | Manuscript 2:<br><br>Educating Pediatric and Med-Peds Residents about Transition from Pediatric to Adult Care: Using the RE-AIM Framework to Evaluate Program Impact |

# Quantitative Phase

# Objectives

1. Using resident surveys and patient chart reviews, measure intervention effect on resident knowledge, confidence and experience in HCT.
2. Identify factors associated with change in resident outcomes.

# Survey Methods

- Non-randomized pre/post test with controls
- Invitation to participate emailed weekly for 4 weeks to:
  - All 67 residents
  - Comparison group of 52 graduated USF residents
- Web-based survey
  - Adapted from University of Kansas survey
  - 35 items with Likert-type responses
  - Expert review and field tested
- Created 5 composite variables for knowledge (2), confidence (2) and experience (1)
- ANCOVA used to determine if differences between residents and comparison group from pre- to post-test were significant; effect size estimated using Cohen's d

# Chart Review Methods

- Retrospective review of all well visits in resident clinics for new and established A/YA ages 12-21
- Data extracted over 60 days, 9 months after introduction
  - Patient variables: age, gender, presence of SHCN
  - Resident variables: gender, program, year, clinic, EHR system
  - Documentation of specific HCT tasks completed during visit
- Fisher's Exact and Chi-squared tests of significance used to calculate EHR utilization rates and associations with resident and patient factors; General Linear Mixed Effect Modeling used for comparisons

# Survey Results

- Sample of 11 residents and 13 controls
  - Residents completed 40 pre-and 34 post-tests, with 11 usable pairs
  - Controls completed 29 pre- and 28 post-tests, with 13 usable pairs
- Compared to controls, residents made significant gains in 2 of 5 outcomes
  - Exposure to learning activities, e.g., heard or read about HCT, attended lecture/training ( $p=.0005$ )
  - Confidence in providing primary care for YSHCN ( $p=.0377$ )
- Large effect size for differences between resident and control change scores in 4 of 5 outcomes ( $d \geq .9$ )

# Chart Review Results

- In sample of 51 residents during 108 well visits, the HCT tool was used by 34 residents (66.7%) in 57 visits (52.8%)
- Among residents who used the HCT tool, most or all of the tasks were addressed during each visit
  - Average of 9.3 HCT tasks completed per visit (out of 5-16 tasks)
- 13 residents (44.8%) used the tool in some but not all visits
- Tool utilization was highest with female patients (66.7%), patients without SHCN (59.4%), 12-14 year olds (55.6%)
- Patient gender was the only variable significantly associated with utilization ( $p=.0395$ )

# Qualitative Phase

# Objectives

1. Assess the perceived importance, acceptability and feasibility of the intervention.
2. Identify factors that influence adoption of intervention components.
3. Identify ways to improve the model.

# Interview Methods

- Used RE-AIM framework to assess program reach, effectiveness, adoption and implementation
- Semi-structured telephone interviews with residents and faculty
  - Interview guide reviewed by experts and field tested
  - Embedded rating scales
- Stratified probability sample of residents
  - Invited 25 Pediatric and 5 Med-Peds residents to participate
  - Randomized selection from resident list
  - \$50 gift card participation incentive
- Purposive sample of 6 faculty preceptors (out of 12)
- Transcripts analyzed using a priori and emergent codes in iterative process, with MAXQDA 11 software

# Interview Results

- Sample of 22 subjects

|                | Residents<br>N=16 | Faculty<br>N=6 |
|----------------|-------------------|----------------|
| Female         | 12 (75%)          | 4 (68%)        |
| Pediatrics     | 12 (75%)          | 4 (68%)        |
| Residency Year |                   |                |
| Year 1         | 1 (6%)            |                |
| Year 2         | 6 (37.5%)         |                |
| Year 3         | 6 (37.5%)         |                |
| Year 4         | 3 (19%)           |                |

# Reach

- Most residents and some faculty were not familiar with particular program components
  - Only one-third of residents attended didactic presentation
  - Two-thirds saw patient educational materials
  - HCT tool in the EHR was only element used by all participants

*"Noon conferences are a great way to spread information but there's a huge percentage of residents that miss it."*

*"There are 6 million pamphlets in that clinic so they just become another pamphlet."*

*"I've heard of all of them (patient materials) but I don't personally know where they're located in the clinic."*

*"I've seen the emails but have not had time to read through them. "*

# Effectiveness

|  | Residents<br>N=16<br>Mean | Faculty<br>N=6<br>Mean |
|--|---------------------------|------------------------|
| Importance of physician-driven HCT services for all A/YA<br>1 (unimportant) to 5 (very important)  | 4.44                      | 4.50                   |
| Resident's current level of experience in HCT<br>1 (very minimal) to 5 (very extensive)<br><i>*3.78 compares to a mean score of 1.31 for pre-residency experience in HCT</i> | 3.78                      |                        |
| Provider utilization of HCT tool in the EHR<br>1 (never) to 4 (always)   | 3.47                      | 2.75                   |
| Overall effectiveness of the HCT training program<br>1 (not effective) to 5 (very effective)   | 3.81                      | 3.08                   |

*"I'm definitely more comfortable than I was before I started." (resident)*

*"I thought it (noon conference) was really helpful. It brought up some issues I hadn't really thought about... like teenagers having a voice in what their medical solutions are." (resident)*

# Adoption

- Participants described multiple factors that influenced adoption, including accessibility of program materials, ease of use, time constraints, patient age or maturity level, complexity of patient's health condition, attending physician's enforcement of the protocol, and communication channels.
- Participants universally said the visibility, convenience and ease of the HCT tool in the EHR made it the most useful program element.

*"I think all of the pieces are there. I just think it's so hard to get everybody in the same place at one time to do the teaching." (resident)*

*"People will miss it if they can't do it super conveniently." (faculty)*

# Implementation

- Uniformity was impacted by number of A/YA patients, availability of computers in exam rooms, and variability in attending physician reinforcement of the protocol.
- Some faculty cited lack of knowledge about adult programs and time constraints as contributing factors to limited enforcement of the HCT protocol.
- All Pediatrics faculty identified a need for faculty development opportunities in HCT, and more education about patient materials and resources.

*"I think some of the attendings might not totally understand (about HCT). So they may have trouble telling us what to do. " (resident)*

*"You just run out of hours in the day to do every single thing that's good and necessary, and you just have to prioritize what things you actually have time to do." (faculty)*

# Conclusions and Implications

# Conclusions

- Results suggest a positive intervention effect on selected dimensions of resident knowledge, confidence and experience in HCT
  - Findings reflect the intervention's focus on HCT *preparation* rather than care plan development or transfer of care activities
  - Faculty were more conservative than residents in their estimation of EHR usage and overall program effectiveness
  - Results show no significant association between outcomes and subgroups of residents
- Study data show program strengths and weaknesses
  - Areas for improvement include increased attention to resident communication channels, faculty development, and targeted education about community resources.
  - Need to better engage faculty in enforcing the protocol

# Conclusions

- The EHR offers a useful method to educate residents about preparing A/YA for HCT and to facilitate change in practice
  - Provides a time-saving and convenient venue that “forces” reminders about initiating HCT discussion
  - Data show some inconsistent usage among residents, though utilization rates are expected to increase over time
  - Does not provide residents with a comprehensive understanding of HCT issues
- The intervention is distinctive in educating residents to prepare *all* A/YA for HCT
  - Consistent with new clinical guidelines
  - Guidelines not yet incorporated in most practices and training programs
- This is one of the first studies to assess impact of residency training in HCT

# Ethical Considerations

- Research team had dual role in program planning and evaluation
  - Took steps to minimize researcher bias and undue influence in participant recruitment
  - No penalty for residents choosing to not participate in study
  - Residents in field test said they are often asked for feedback about aspects of the residency program, and felt participants would be truthful; however, some residents interviewed appeared to overstate frequency of utilization of HCT tool in EHR
- Residents were offered \$50 gift card for participation in interview
- Approved by the USF IRB

# Limitations and Strengths

| Quantitative Phase   | Qualitative Phase   | Mixed Methods   |
|--|---|---|
| <b>Limitations</b>   |   |   |
| Small survey sample size<br>- limited generalizability<br>- no test of association between resident factors and outcomes | Limited transferability of findings                               |   |
| Self-report data raises concerns about accuracy  | Potential for selection, recall, response, researcher bias        | Discrepancies between self-report and chart review                |
| Chart review dependent on accurate documentation   | Risk of missing social cues, body language in telephone interview |   |
| Limited understanding of causal pathways   |   |   |
| <b>Strengths</b>   |   |   |
| Comparison group strengthens rigor and validity  | In-depth, contextual data   | Triangulation of data increases rigor and credibility of findings |

# Implications

- Further studies needed to understand program impact over time:
  - Does HCT tool utilization change with continued exposure?
  - Does faculty training improve intervention adoption?
  - Do residents continue to provide HCT preparation services in post-residency practice?
- Intervention may be adapted for other professional training programs
- Health care self-management should be emphasized early and often through lifespan; integrate in preventive care tools through MCHB and professional associations
- Need to develop an HCT preparation and planning tool that can be used across multiple systems

Thank you!

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