CHILDREN’S MENTAL HEALTH AND THE LIFE COURSE PERSPECTIVE
A Webinar Series Co-Organized by the Life Course Research Network and the Forum for Children’s Well-Being
Challenging Trends for Improving Health Systems to Address Children’s Mental Health Risks: A Three Horizons Perspective

Kimberly Eaton Hoagwood, PhD
Cathy and Stephen Graham Professor and Vice Chair for Research, Department of Child and Adolescent Psychiatry, NYU Langone Health, Center for the Implementation and Dissemination of Evidence-Based Practices Among States (IDEAS), an NIMH-Funded ALACRITY Center
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Today’s Presentation

**Q1**: Trends in children’s mental health service needs, use, and disparities

**Q2**: The three horizon perspective and its application to children’s mental health system changes

**Q3**: Emerging models: Towards improved health systems that promote children’s mental health within a life course health and development model
Infant mortality rates have declined over the past decade.

Figure 1. Infant mortality rates, by race and Hispanic origin of mother: United States, 2005–2014

- Non-Hispanic black
- American Indian or Alaska Native¹
- Non-Hispanic white
- Hispanic
- All
- Asian or Pacific Islander¹

¹Includes persons of Hispanic and non-Hispanic origin.

NOTES: For “All” and each race and Hispanic origin group, the decline in the rate for 2005–2014 is statistically significant (p < 0.05). Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/db279_table.pdf#1.

Health Insurance Coverage for Nearly all U.S. Children: 95%

Percentage of Children Covered by Health Insurance At Any Point in the Past Year, by Type of Insurance, Selected Years, 1987-2016

Retrieved from: https://www.childtrends.org/indicators/health-care-coverage
Health Care Costs Increasing for Families and their Children

Cumulative growth in premiums and out-of-pocket spending for families with large employer coverage, 2008-2018

- Worker share (OOP and premium)
- Employer share (premium)
- Workers' wages

Note: Out-of-pocket (OOP) costs are inflated from 2017 to 2018 because data are not yet available. Large employers are those with one thousand or more employees.

The State of Children’s Mental Health: Mental Disorders in U.S. Children

One in six U.S. children between the ages of 6 and 17 has a treatable mental health disorder (Whitney & Peterson, 2019)

17.1 million young people have or have had a diagnosable psychiatric disorder (Merikangas et al., 2010)

The State of Children’s Mental Health: 
Prevalence Rates for Mental, Emotional and Behavioral 
Health Disorders

- Anxiety: 31.9 percent
- Behavior disorders: 19.1 percent
- Depression: 14.3 percent
- Substance disorders: 11.4 percent
- Comorbidity: 40 percent
- Suicide: second most common cause of death, ages 15-24; third most common, ages 10-14

Most Common MH Disorders in Youth

- **Anxiety Disorders**: 31.9% with severe impairment (8.3%)
- **ADHD and Disruptive Behavior**: 19.6% (9.6%)
- **Depression and Bipolar Disorders**: 14.3% (11.2%)
- **Eating Disorders**: 2.7%

Source: Child Mind Institute, 2015. Merikangas, et al., 2010)
In ~ **70%** of cases, ADHD **co-occurs** with another mental, emotional, or behavioral disorder.

Children with ADHD and co-occurring conditions have **more significant functional impairments**.

Trends in Youth Suicide Rates: 1999-2016
Deaths per 100,000, ages 10-19

1Significant decreasing trend from 1999–2007; significant increasing trend from 2007–2016, p < 0.05.
2Significant increasing trend from 1999–2016, p < 0.05.
3Significant decreasing trend from 1999–2008; significant increasing trend from 2008–2016, p < 0.05.
4Significant increasing trend from 1999–2016, p < 0.05.

NOTES: Suicide deaths are identified with International Classification of Diseases, Tenth Revision (ICD–10) codes *U03, X60–X84, and Y87.0; suicide deaths involving firearms with codes X72–X74; suicide deaths involving suffocation with code X70; and suicide involving poisoning with codes X60–X69.
Trends in Psychiatric-Related Emergency Department (ED) Visits (% age of all visits, 2005-2015)

Prevalence and Treatment of Mental Health Disorders in the U.S. (age <18)

- **Half (50%)** of the estimated 7.7 million U.S. children with a treatable mental health disorder did not receive needed treatment from a mental health professional.
- **Alabama, Mississippi, Oklahoma, and Utah** in top quartile for both prevalence and those who did not receive needed treatment for mental health disorders.

Disparities in Mental Health Service Use by Youth  Merikangas et al., 2010 (NCS-A)

- Ethnic/racial minorities had lower treatment rates than did non-Hispanic whites for several classes of disorder:
  - Hispanics were less likely to receive treatment for mood and anxiety disorders;
  - Non-Hispanic Blacks were less likely to receive treatment for mood disorders; and
  - Other/multiracial ethnic youth were less likely to receive treatment for anxiety and ADHD

Influences on Mental, Emotional and Behavioral Health

- **Environment** modulates gene expression and shapes neurodevelopment
- **Experiences** affect conception, gestation, and childbirth
- Characteristics of the **family and community** (e.g., parent characteristics, peer behavior, and school characteristics) affect development
- Characteristics of the **broader society** (e.g., poverty and economic inequality, systemic racism and discrimination, law- and policy-driven factors, marketing of unhealthy products) affect health and development

Three Horizons Thinking

(Hodgson & Sharpe, 2007; Curry & Hodgson, 2008; Sharpe 2013; Sharpe, Hodgson, Leicester, Lyon & Fazey, 2016)

• Focused on bridging different kinds of knowledge

• Focused on change processes that lead to significant systemic changes

• Designed for complex problems with uncertain predictive models

• Provides an analytic lens for environmental action
Three Horizons Thinking

• **Horizon 1:** A pattern of incremental change that is losing its fit with emerging conditions

• **Horizon 2:** A turbulent domain of transitional activities and innovations in response to the changing landscape

• **Horizon 3:** An emerging pattern that is appearing and growing on the fringes of the present system

......Different views of the future are expected, and competing models are encouraged for exploration
Framing the Issues

Source: Hodgson & Sharpe, 2007; Curry & Hodgson, 2008; Sharpe 2013; Sharpe et al., 2016)
Three Horizons: Example from Solar Energy

An Approach to Framing the Issues
Three Horizons Thinking for Children’s Mental Health

Children’s Mental Health

- Abundance (declining)
- Constraints & Scarcity
- New Abundance?

1st Horizon

**Knowledge Expansion**
Science-based programs, therapies and services; system fragmentation

2nd Horizon

**Messy Mix**
Short vs. long term responses

3rd Horizon

**Viable Sustainability**
Transformed health systems

HORIZON 1
- Availability of reliable and valid screening & diagnostic tools
- Robust science base on effective treatment & services
- Fed govt funding support on neurodevelopment, treatment and mechanisms

HORIZON 2
- Shift from FFS to mgd care
- Digital technologies
- Continuous quality improvement, msmt feedback & accountability
- Population health experiments w/awareness of social risk factors and accountability

HORIZON 3
- Population health system for all children
- Lifecourse perspective
- Seamless, flexible and responsive with shared responsibility for outcomes

Source: Figure adapted from Curry et al. 2008.
Horizon 1: Knowledge Expansion

Abundance of evidence-based practices (EBPs)

- **PracticeWise Blue Menu** (Chorpita & Daleiden, 2009): Menu of EBPs for 5 problem areas (anxious/avoidant behaviors, attention and hyperactivity behaviors; autism spectrum disorders; delinquency/disruptive behaviors; depressive/withdrawn behaviors)
- **Blueprints (University of Colorado)**: 15 ‘model’ programs, 64 ‘promising practices’

Data on benefit-cost ratio EBPs/programs/policies

- **Washington State Institute for Public Policy (WSIPP)**: Menu of 200+ policy options/programs, whether they achieve improvements in outcomes, and their benefit-to-cost ratio

Expansion of neurodevelopmental studies and LCHD

NIH attention/investment in this area:

- NIMH Decade of the Brain Initiative (1990-1999)
- Research Domain Criteria (RDoC)(2010-) framework development
- Division of Neuroscience and Basic Behavioral Science (DNBBS) funding
Horizon 1: Implementing is Fraught with Challenges

Evidence-based practices and their implementation
(Hoagwood et al., 2014)

- Multiple barriers related to
  - Lack of feasibility
  - Training burden
  - Costs
  - Measurement, monitoring

- Approximately 61 different implementation frameworks, but
  - Few practical tools
  - Few examples of implementation success
  - Very costly
Horizon 1: Incremental Change Losing its Fit

Example: NIMH Funding for Child Mental Health Services Research (Hoagwood et al., 2018)

NIMH Child and Adolescent Mental Health Services & Intervention Research Funding, 2005-2015

42% drop
Horizon 1: Incremental Change Losing its Fit
NIMH Investment in Children’s Services Research vs. NIMH Total Budget

Source: Data retrieved from NIH RePORTER; see Figure 2 for search methodology. All data are in FY 2015 dollars, adjusted using the NIH Biomedical Research and Development Price Index (BIRDPI): see https://officeofbudget.od.nih.gov/pdfs/FY16/BIRDPI_Values_for_2014_2020.pdf for BIRDPI calculations. All FY data excludes HIV/AIDS services grants, and FY 2009 and FY 2010 data excludes ARRA funding. FY 2000 Total NIMH funding is appropriation not budget authority.
Horizon 1: Incremental Change Losing its Fit
Example: NIH Funding for Policy-Focused D&I Research

Horizon 2: Disruptive Changes

- **Digitalized domination of health care**: Changing mental models of health/pathology
- Continuous Quality Improvement (CQI), development of **quality indicators** for children’s services, accountability for outcomes
- **Family** as service unit; competency development for family support providers
- Breaking down boundaries: multidisciplinary knowledge generation; applying science to the ‘**black box**’ of policy-making
- **Broadening** the workforce (parent peer advocates)
- **Empowerment and education** of families, consumers, the public: explosion of accessible knowledge and accessible garbage
Horizon 2: Disruptive Change

Example: 2019 Medicaid Child Core Set

BH measures include:

- Depression screening (12-17)
- ADHD medication follow-up
- MH hospitalization follow-up
- 1st line psychosocial care for youth on antipsychotics
- Use of multiple, concurrent antipsychotics in youth

Proposed additions (2020):

- Metabolic monitoring measure for children and adolescents on antipsychotics (APM)

Measures under consideration:

- broader psychotropic polypharmacy measure;
- a bundle of measures for maternal health

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### 2019 Core Set of Children's Health Care Quality Measures for Medicaid and CHIP (Child Core Set)

<table>
<thead>
<tr>
<th>NQF #</th>
<th>Measure Steward</th>
<th>Measure Name</th>
<th>Data Collection Method</th>
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</thead>
<tbody>
<tr>
<td>0824</td>
<td>NCQA</td>
<td>Weight Assessment and Counseling for Nutrition and Physical Activity for Children/Adolescents - Body Mass Index Assessment for Children/Adolescents (WCG-CH)</td>
<td>Administrative, hybrid, or EHR</td>
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<td>0833</td>
<td>NCQA</td>
<td>Chlamydia Screening in Women Ages 18–20 (CHL-CH)</td>
<td>Administrative or EHR</td>
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<td>0038</td>
<td>NCQA</td>
<td>Childhood Immunization Status (CIS-CH)</td>
<td>Administrative, hybrid, or EHR</td>
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<td>0418/0418e</td>
<td>CMS</td>
<td>Screening for Depression and Follow-Up Plan: Ages 12–17 (CDF-CH)</td>
<td>Administrative or EHR</td>
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<td>1302</td>
<td>NCQA</td>
<td>Well-Child Visits in the First 16 Months of Life (W15-CH)</td>
<td>Administrative or hybrid</td>
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<td>1407</td>
<td>NCQA</td>
<td>Immunizations for Adolescents (IMA-CH)</td>
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<td>1448*</td>
<td>CHSU</td>
<td>Developmental Screening in the First Three Years of Life (DEV-CH)</td>
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<td>1518e</td>
<td>NCQA</td>
<td>Well-Child Visits in the Third, Fourth, Fifth and Sixth Years of Life (W34-CH)</td>
<td>Administrative or hybrid</td>
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<tr>
<td>NA</td>
<td>NCQA</td>
<td>Adolescent Well-Care Visits (AWC-CH)</td>
<td>Administrative or hybrid</td>
</tr>
<tr>
<td>NA</td>
<td>NCQA</td>
<td>Children and Adolescents' Access to Primary Care Practitioners (CAP-CH)</td>
<td>Administrative</td>
</tr>
</tbody>
</table>

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**Maternal and Prenatal Health**

- 0130 CDC Pediatric Central Line-Associated Bloodstream Infections (CLABSI-CH)
- 0471 TJC PC-02: Cesarean Birth (PC02-CH)
- 1360 CDC Audiological Diagnosis No Later Than 3 Months of Age (AUD-CH)
- 1382 CDC Live Births Weighing Less Than 2,500 Grams (LBW-CH)
- 1517* NCQA Prenatal and Postpartum Care: Timeliness of Prenatal Care (PPC-CH)
- 2902 OPA Contraceptive Care – Postpartum Women Ages 15–20 (CPP-CH)
- 2003/2004 OPA Contraceptive Care – All Women Ages 15–20 (CCW-CH)

**Care of Acute and Chronic Conditions**

- 1800 NCQA Asthma Medication Hatter: Ages 5–18 (AMR-CH)
- NA NCQA Ambulatory Care: Emergency Department (ED) Visits (AMB-CH)

**Behavioral Health Care**

- 0188 NCQA Follow-Up Care for Children Prescribed Attention-Deficit/Hyperactivity Disorder (ADHD) Medication (ACD-CH)
- 0576 NCQA Follow-Up After Hospitalization for Mental Illness: Ages 8–17 (FUH-CH)
- 2901 NCQA Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics (APF-CH)
- NA NCQA Use of Multiple Concurrent Antipsychotics in Children and Adolescents (APC-CH)

**Dental and Oral Health Services**

- 2508* DQA (ADA) Dental Sealants for 6–9 Year-Old Children at Elevated Caries Risk (SEAL-CH)
- NA CMS Percentage of Eligibles Who Received Preventive Dental Services (PDI-CH)
Horizon 3: Transformative Changes: Pockets of Future in the Present

Trends:

• Focus on promoting *children's well-being*, not only treating pathology; *population*-level responsibility (NAM 2019 Report on Fostering MEB health)

• Focus on *social determinants of health* (SDOH), not only specific clinical disorders; and

• Focus on local experimentation

Examples: Targeting Social Risks; Integrating Services

• State experiments: NYS Value-Based Purchasing and First 1,000 days; MN; MA; OR; CO; VT

• Community experiments (IncK Model; local integration, cross-sharing)

• Hospital system experimentation: Nationwide Children’s Hospital
Horizon 3: Transformative Change
Example: New York State Value-Based Care in Medicaid (continued)

2014 New York Medicaid Expenditure Quartiles for Continuously Enrolled Children, Ages 0–20

- 24,686 Enrollees (1.4%)
- 155,939 (8.8%)
- 728,796 (41.2%)
- 858,014 (48.5%)

Half of all Medicaid child expenses go toward the highest-need 10% of all children on Medicaid.

90% of child enrollees account for only half of all Medicaid child expenses.

Expenditures by Quartile:
- $1.9 Bn
- $1.9 Bn
- $2.1 Bn
- $1.7 Bn


Horizon 3: Transformative Change
Example: New York State Value-Based Care in Medicaid (continued)

THE FIRST 1,000 DAYS: MEDICAID’S CRITICAL ROLE

The first 1,000 days of a child’s life are a critical window for development. Exposure to adverse childhood experiences (ACEs) dramatically increases the potential for life-long negative health and social outcomes.

MEDICAID’S UNIQUE ROLE IN EARLY CHILDHOOD
Medicaid is uniquely positioned to identify and connect at-risk children (ages 0-3) in low-income families with needed health, developmental, and social services — increasing the odds that children get a good start in life.

MAXIMIZING MEDICAID’S WINDOW OF OPPORTUNITY
There are key opportunities for state Medicaid agencies and their health plan contractors to support high-risk, low-income families:

To learn more, visit www.chcs.org/medicaid-early-childhood-lab/.

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Horizon 3: Transformative Change
Example: Integrated Care for Kids (InCK), DHHS, CMMI.
Targets social risk factors

Framework

The Integrated Care for Kids (InCK) Model is a child-centered local service delivery and state payment model aimed at reducing expenditures and improving the quality of care for children covered by Medicaid and CHIP, especially those with or at-risk for developing significant health needs.

Goals:

1. Improving performance on priority measures of child health
2. Reducing avoidable inpatient stays and out-of-home placements
3. Creation of sustainable Alternative Payment Models (APMs)
Horizon 3: Transformative Change
Example: Nationwide Children’s SDOH Initiative
Healthy Neighborhoods, Healthy Families

JOURNEY TO BEST OUTCOMES
Through best people & programs

CORE STRATEGIES
- One Team Values
- Growth & Partnerships
- Education
- Operational Excellence

GOAL
Pre-eminent Clinical & Research Programs

ACCELERATORS
- Quality, Safety & Service
- Behavioral Health
- Genomics
- Wellness/Population Health

VISION
BEST OUTCOMES
for Kids Everywhere
Franklin County Opportunity Index Map

RED = LEAST OPPORTUNITY/HIGHEST RISK

Nationwide Children’s Hospital
Columbus, Ohio

Healthy Neighborhoods, Healthy Families
Zone 06*

Population: 1,856

612 Children
- Under 5 years: 23%
- 5 to 19 years: 77%

73% Minority
- Black, Non-Hispanic: 69%
- White, Non-Hispanic: 27%
- Hispanic: 3%
- Asian: 2%
- Multiracial: 4%

493 Families
- 23.6% of 1,021 housing units are owner-occupied

Per Capita Income
- $17,581

Source: 2012 Census Data for Census Tract 0056.10
Neighborhood Distress and Child Development

- Epigenetics/gene expression
- Structural neuronal changes
- Hormonal alterations
- Cognitive, behavioral, social outcomes
Vacancy Rate 2009 - 2016

Closing Thoughts: The 3rd Horizon

FIGURE 11-1 Interventions across the life course.

Closing Thoughts

Towards 3rd Horizon Thinking

• Inter-generational services
• Healthcare setting strategies (over the life course)
• Policy strategies that cross systems
• Creative financing options for health promotion
• Research to bridge gap between practice and policy: comparative policy impact studies