Guiding Good Choices for Health (GGC4H): Barriers and Challenges to Data Collection in a Pediatrics-based Pragmatic Prevention Trial

Margaret Kuklinski, PhD, MPI
Stacy Sterling, DrPH, MSW, MPI

NIH Pragmatic Trials Collaboratory Annual Meeting
April 21, 2022
Guiding Good Choices for Health (GGC4H)

**Overall aim**

Evaluate feasibility and effectiveness of implementing Guiding Good Choices in 3 large integrated healthcare systems:

- Kaiser Permanente Northern California
- Kaiser Permanente Colorado
- Henry Ford Health System

working in partnership with University of Washington, developers and distributors of GGC
Guiding Good Choices for Health (GGC4H)

- 6 virtual sessions
  - Specific parenting skills
  - Strategies to promote bonding

- 2 RCTs → GGC reduced
  - Alcohol, marijuana, cigarette use
  - Symptoms of depression
  - Antisocial behavior
  - Effects sustained for 4-6 years (Grades 10-12)

- GGC also strengthened families
  - Better communication
  - Closer relationships
  - Less family conflict
GGC4H: Longitudinal Cluster-Randomized Trial

- Randomize 75 pediatricians within 3 HCS and 10 clinics
- Recruit ~3,600 adolescents to study – 2 Cohorts
- Offer GGC to all parents in intervention arm
- **RE-AIM** measurement framework
  - Implementation: Reach, adoption, implementation fidelity, participant engagement and skills
  - Effectiveness: Evaluate GGC’s impact on adolescent health
Adolescent Health Outcomes

- **Primary – Substance use initiation with 4 indicators**
  - Alcohol, Cannabis, e-Cigarette, Tobacco Use

- **Secondary – Other impacts from prior trials**
  - Depression Symptoms, Antisocial Behavior

- **Exploratory – Available in EHR, not previously evaluated but plausibly linked to GGC**
  - Anxiety Symptoms, Health service utilization (inpatient, ED)

- **Mechanisms to GGC impact**
  - Risk and Protective Factors
  - Family, Peer, Individual, School
Data Collection: EHR Opportunities & Assets

- **Clarity database**
  - Tracks appointments and encounters
  - Refreshed in real time or daily

- **Virtual Data Warehouse**
  - Database developed over 20 years to support multisite HCS research
  - Enrollment, demographics, encounters, diagnoses, pharmacy, laboratory, PROs, claims
  - Data are harmonized, standardized across member sites, continually updated

- **Skilled data collection team**
Data Collection: EHR Needs & Challenges

Eligibility
- Cohort identification
- Well-visit identification
- Pediatrician reminders: Well-visits and GGC recommendation

Adolescent Health
Data collected during routine clinical care:
- Substance use
- Mental health
- Medical diagnoses
- Utilization – ED, inpatient, outpatient

GGC Cost-Effectiveness
- Decision-support systems: utilization and accounting
- Clinical encounters: Service unit cost
- Services provided at non-HCS facilities but paid for by HCS

4 issues
1. Data not collected.
2. Data not collected consistently.
3. Data collected but not consistently stored in EHR.
4. Data stored in EHR can be hard to extract.
## Adolescent Behavioral Health Survey

<table>
<thead>
<tr>
<th>GGC4H YOUTH OUTCOMES</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary</strong></td>
<td><strong>Secondary</strong></td>
<td><strong>Exploratory</strong></td>
<td><strong>Mechanisms</strong></td>
</tr>
<tr>
<td><strong>Substance Use</strong></td>
<td>Depression (PHQ-9)</td>
<td>Anxiety (GAD-7)</td>
<td>Risk &amp; Protective Factors</td>
</tr>
<tr>
<td>Age of Initiation</td>
<td>Antisocial Behavior</td>
<td>Screen &amp; Social Media</td>
<td>Parent &amp; Family</td>
</tr>
<tr>
<td><strong>Substances Examined</strong></td>
<td>Ever, Past-Year</td>
<td>Time</td>
<td>Individual</td>
</tr>
<tr>
<td>Alcohol, Marijuana,</td>
<td><strong>Substance Use</strong></td>
<td></td>
<td>Peer</td>
</tr>
<tr>
<td>Cigarettes, E-Cigarettes,</td>
<td>Lifetime Frequency</td>
<td></td>
<td>School</td>
</tr>
<tr>
<td>Inhalants, Opioids, Other</td>
<td>Past-Year, Past 30-day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drugs</td>
<td>Past 30-day Amount</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Well-validated measures, strong psychometrics
- Rich data, but not pragmatic to collect
- Flexible – can adjust items judiciously in response to
  - Developmental changes in adolescents
  - COVID
Thank you to our team and funders

We are grateful to NCCIH, NIDA, ODP, and OBSSR for funding and partnering on this study (UH3AT009838) and to the NIH Pragmatic Trials Collaboratory and NIH Collaboratory Coordinating Center (U24AT009676) for supporting this work.

Guiding Good Choices for Health (GGC4H)

<table>
<thead>
<tr>
<th>University of Washington</th>
<th>Kaiser Permanente Northern CA</th>
<th>Kaiser Permanente Colorado</th>
<th>Henry Ford Health System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margaret Kuklinski, PhD, MPI</td>
<td>Stacy Sterling, DrPH, MPI</td>
<td>Arne Beck, PhD, Site PI</td>
<td>Jordan Braciszewski, PhD, Site PI</td>
</tr>
<tr>
<td>Sabrina Oesterle, PhD, Methodologist</td>
<td>Rahel Negusse, Site PD</td>
<td>Erica Morse, MA, Site PD</td>
<td>Farah Elsiss, MA, Site PD</td>
</tr>
<tr>
<td>Kevin Haggerty, PhD, GGC Expert</td>
<td>Charles Quesenberry, PhD, Lead Biostatistician</td>
<td>Jennifer Boggs, PhD, Co-I</td>
<td>Amy Loree, PhD, Co-I</td>
</tr>
<tr>
<td>Dalene Beaulieu, BA, GGC Master Trainer</td>
<td>Lauren Hartman, MD, Physician Leader</td>
<td>Matt Daley, MD, Physician Leader</td>
<td></td>
</tr>
</tbody>
</table>

Consultants

- Hendricks Brown, PhD
- John Graham, PhD
- Kathryn McCollister, PhD
- Ellen Perrin, MD

**GGC4H Scientific Leadership**

**NIH Leadership**

- **NCCIH**
  - Beda Jean-Francois, PhD, Project Officer
  - Elizabeth Ginexi, PhD, Project Scientist

- **Ad Hoc Members**
  - Qilu Yu, PhD, NCCIH
  - Elizabeth Nielsen, PhD, ODP
  - Erica Spotts, PhD, OBSSR

*Bolded names are members of the Executive Committee*