MY SUMR EXPERIENCE AT THE CENTER OF CLINICAL EPIDEMIOLOGY AND BIOSTATISTICS

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TWO PROJECTS

Recovering Concussion Update on Progression of Symptoms (ReCoUPS)
- Background
- Study Aims and Design
- Way to Health
- My Role
- Next Steps

National Institute of Justice-Space-Time Adolescent Risk Study (NIJ-STARS)
- Background
- Study Aims
- Methods
- My Role

- Lessons Learned
- Questions
REAL-TIME MONITORING OF CONCUSSION PATIENTS DURING RECOVERY

Project 1
CONCUSSION BACKGROUND

• Comprise 2.5 million of ED visits, hospitalizations, or deaths in the US each year\(^1\)

• 15% of patients with week- or month-long durations of symptoms or deficits\(^2\)

• Optimal amount and type of rest to return back to normal is up for debate

• Patient adherence to rest recommendation is unknown

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RECOUPPS 1.0 STUDY AIMS

• Determine the feasibility of ecological momentary assessment (EMA) following concussion

• Gather real-time reports of cognitive and physical activity through a survey app and step tracker

• Compare objective measures with real-time reported symptoms
Did you take any pain medicine for your concussion today?

- None
- Melatonin
- Tylenol
- Advil/Motrin
- Aleve
- Excedrin
- Other

What percent do you feel you are recovered from your concussion?

- 76%
  - No recovery
  - Fully Recovered
In general, to what degree do you feel differently than before your injury (not feeling like yourself)?

(0=No Difference, 4=Major Difference)

How many hours did you spend doing homework today?
Wiebe DJ, Nance ML, Houseknecht E, Grady MF, Otto N, Sandsmark DK, Master CL. Ecologic momentary assessment to accomplish real-time capture of symptom progression and the physical and cognitive activities of patients daily following concussion. JAMA Pediatrics 2016 Nov 1; 170(11):1108-1110.
RECOUPS 2.0 STUDY AIMS

• Quantify the concussion recovery process by monitoring symptoms and cognitive and physical activity on a daily basis

• Assess behavioral strategies by measuring patient adherence to report symptoms and activities
RECOUPS 2.0 STUDY DESIGN

- EMA with a phone app intervention
  - 3 surveys per day for 21 days

- Randomization of participants into three incentive-based arms
  - **Control:** $300 regardless of their response rate.
  - **Streak-Based:** $1 for each response, increasing by $0.25 up to $5 for each consecutive response. Maximum $300.
  - **Loss-Based:** Begins at $300 but will lose $4.75 for each missed response.

- Record data from FitBit, Stepz app, Moment app
WAY TO HEALTH

- Web-based interface created by CHIBE
MY ROLE

• Develop an enrollment instruction guide

• Collaborate with Way to Health

• Test data

• Work on a manual of procedures for data management and entry
NEXT STEPS

• Continue testing data

• Design surveys on Qualtrix

• Train AAs at the end of August

• Enroll participants in early September
TRACKING YOUTH VIOLENCE IN AND AROUND PHILLY SCHOOLS

Project 2
BACKGROUND

• More than 7 million children in America received ED treatment for violent injuries at school in the past decade\(^1\)

• School metal detectors, security cameras, and on-site security guards have not been shown to prevent violence\(^2,3,4,5\)

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STUDY AIMS

• To utilize the concept of space-time windows of assault risk to investigate how students’ surroundings over the school day relate to the likelihood of being assaulted.
MIXED METHODS

• Structured survey with victims of violence
  • Questions about injury type, attitudes towards school, community, etc.

• Mapping software to track victim’s path leading up to assault

• Qualitative interviews with teachers and students

• Quantitative analysis of PA state-wide school violence data
MY ROLE

• Create a survey instrument on REDCap
• Clean school violence data set
• Learn about and perform cluster analyses on STATA
• Attend biweekly meetings
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Questions?