

THE USE OF SCREENING AND MONITORING FOR CHILDREN WITH MEDICAL ILLNESS: A PREVENTION-BASED MODEL OF NEUROPSYCHOLOGICAL SERVICE DELIVERY

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Background

- Chronic illness in childhood can confer increased risk for disruption in neuropsychological development
 - Pediatric cancers
 - Sickle-cell disease
 - Neurofibromatosis
 - Congenital heart disease
 - HIV
 - Diabetes
 - Epilepsy

Background

- Neuropsychological services are generally not included in a health prevention model
 - No neuropsych “check ups”
- Most providers rely on a comprehensive approach to assessment
- Children are often not referred until problems are apparent and impairing

Objectives

- Introduce a tiered model of neuropsychological evaluation used in pediatric research
- Show examples of the feasibility and utility of this approach
- Summarize why this model can facilitate a number of research and clinical goals related to caring for children with medical illness

Challenges in Clinical Evaluation

- Typical neuropsychological evaluation takes hours of provider and patient/family time
 - Impractical when evaluating sick children
 - Difficult to “squeeze in” an assessment
- Most traditional neuropsych tests were not designed to be repeated in less than a year
 - Problematic when there is a need to track acute changes

Guiding model: Youngstrom

- Eric Youngstrom's Evidence-based Assessment model (2008; 2012)
- Emphasizes assessment *utility*
 - *“Our most widely used tools do not have a literature establishing their validity in terms of individual prognosis or treatment, and viewed through the lens of utility they look superfluous*

Youngstrom, 2012, p 2

Assessment utility: 3 Ps

Prediction

- *Test results are associated with some criterion of importance*

Prescription

- *Test results can guide the choice of treatment*

Process

- *Test results can inform the treatment process or response*

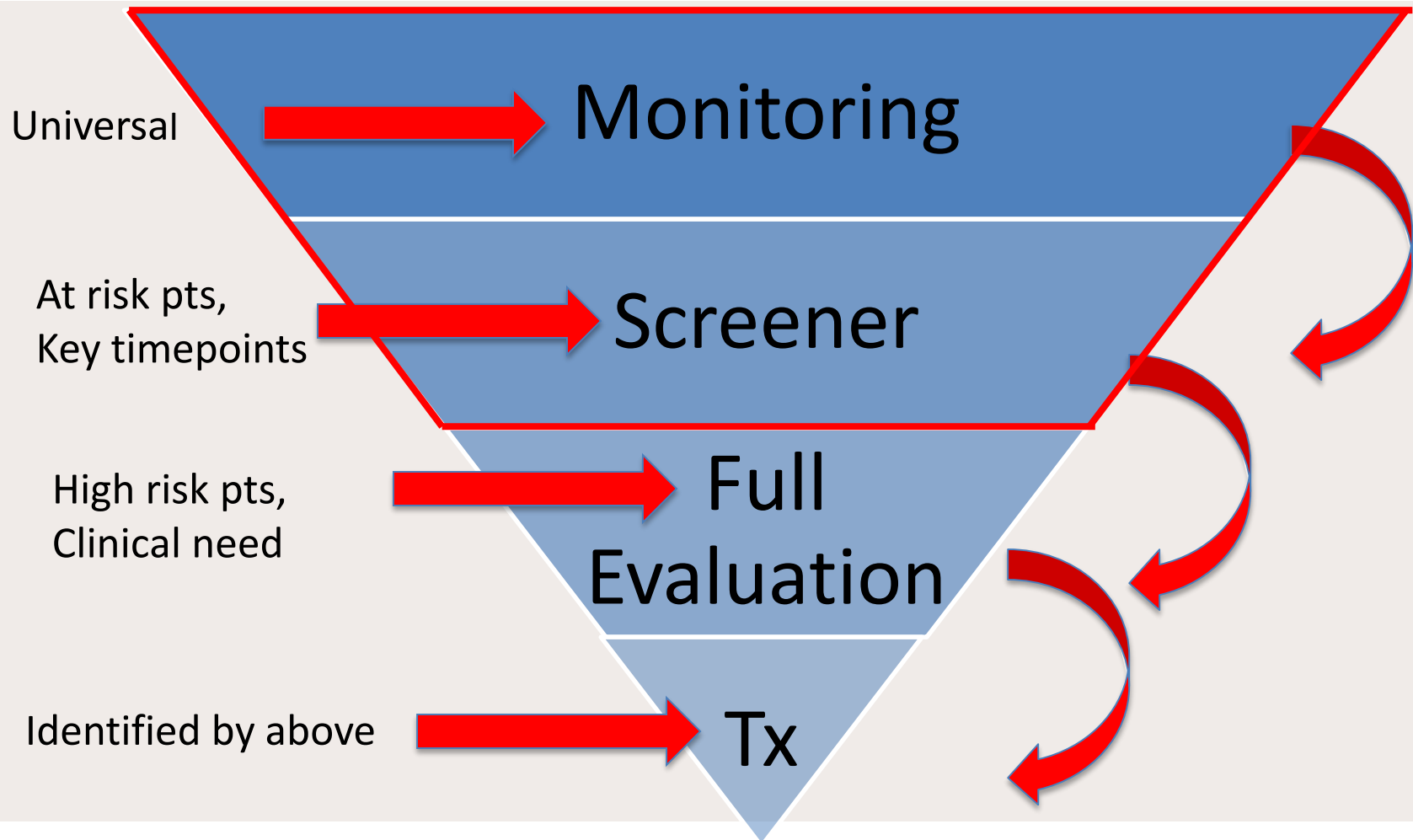
Youngstrom's idea

Can we apply Evidence-Based Medicine (EBM) methods to psychological assessment?

- “Each piece of evidence needs to demonstrate that is it valid and that it has the potential to help the patient.”

Youngstrom, 2012, p 3

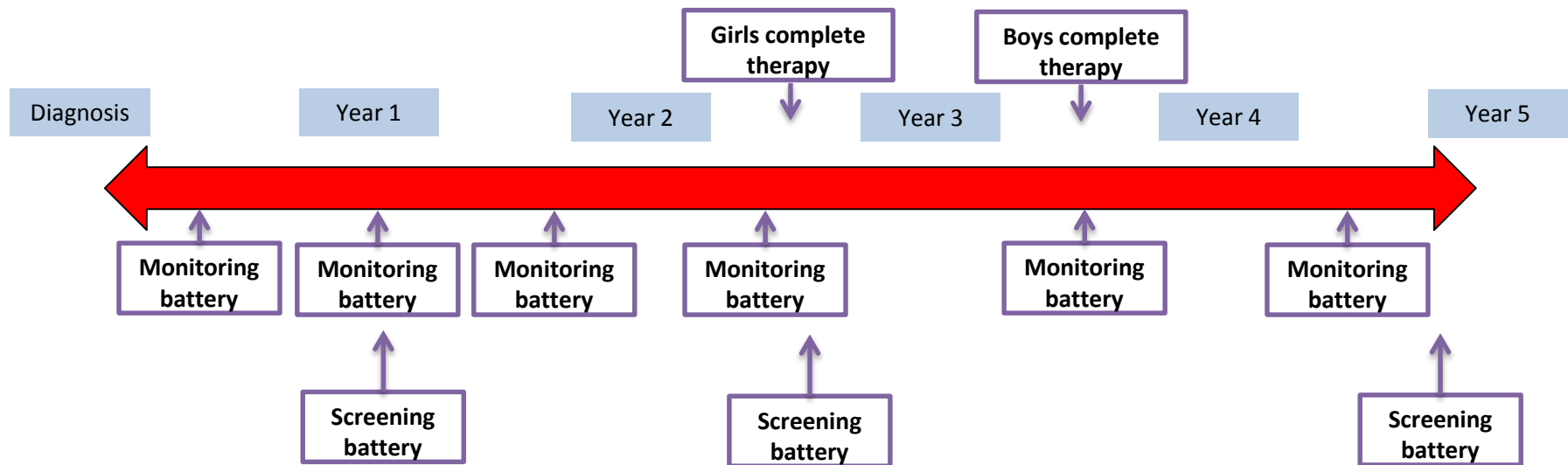
Assessment and Treatment Model



Hardy, Olson, & Walsh, under review

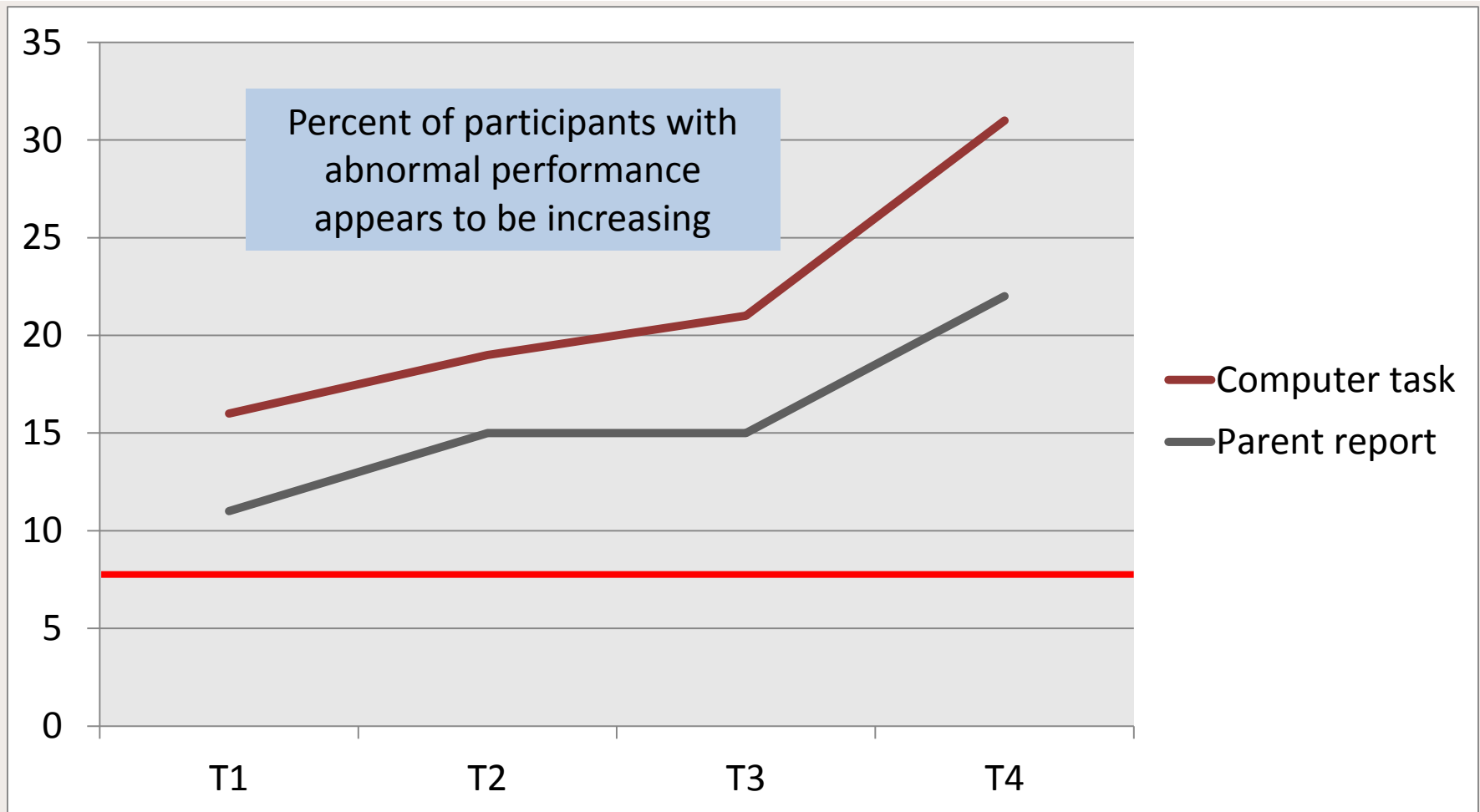
Example 1: Cognitive changes during treatment for Pediatric Leukemia

When during treatment do cognitive changes begin?
Who is most vulnerable?



Computer testing and
questionnaires completed in
clinic by nurses, RAs;
Psychologists complete
Screening battery

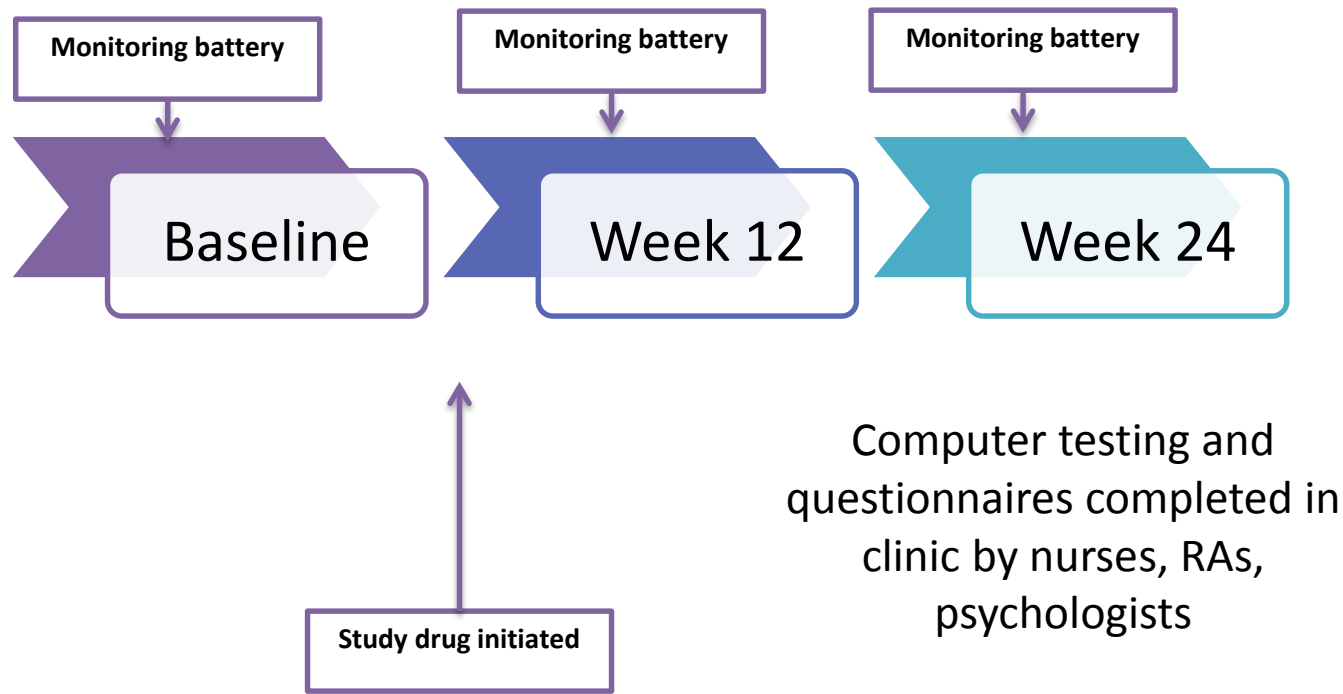
Example 1: Emergence of Late Effects in Leukemia



Percentage of participants with abnormal scores (1.5 SD) at each timepoint

Example 2: Clinical Response in NF1

Does cognitive functioning change in response to a novel treatment for plexiform neurofibromas?



Clinical Application: Surveillance and Cognitive Assessment of Neurological Disorders Clinic (SCAN)

- Focused assessment clinic targeting:
 - Children at high-risk for cognitive deficits or identified on screening
 - Establishment of “baseline” evaluations for ongoing monitoring or referral to full evaluation
- Temporally and fiscally efficient

Summary

- Research use
 - Brief batteries may increase compliance and data fidelity
 - Force us to be focused and selective in research questions
 - Uniform battery allows for meaningful comparisons across studies
- Clinical use
 - Target known cognitive vulnerabilities
 - Less time and patient burden

Summary

- Collaborative multidisciplinary approach to neuropsychological care
- Promotes flexible, evidence-based approach to neuropsychological care
- Emphasis on prevention