

# Spreading TCOM Through Spaced Education

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# Purpose of Spaced Education

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- In contrast (or in addition) to traditional classroom-based trainings, **spaced education** is structured as a series of concise, complex reasoning questions designed to quickly inform participants on learning objectives with questions “spaced” from several hours to several days apart and take only a few minutes to complete.

# Pedagogical Roots of Spaced Education

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## Educational Psychology and Neuroscience Literature:

- Adult learning
- “Spacing effect”
- “Testing effect”

## Memory and Knowledge Retention:

- Interval reinforcement
- Shown to increase knowledge retention up to 170%
- The forgetting curve

(Kerfoot, Armstrong, & O’Sullivan, 2008)

# Research in Healthcare

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- Spaced education as a proven method to increase knowledge retention in medical residents, medical students, nurses and other clinicians in hospital and/or surgical settings.
- Results:
  - Positive changes in nurses pain assessment capabilities.
  - Associated with positive behavior change.
  - Significantly enhances student knowledge of content area and long-term retention for best practices.
    - Radiology
    - Oncology
    - Urology
    - Psychiatry
    - Patient safety personnel

# Use of Spaced Education in Healthcare Settings

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- Capacity-building
  - Greater confidence in job role
- Preservice education
- Sustained in-service training
- Continuous professional development
- A simple means to prevent becoming obsolete and incapable of delivering quality service.

# Implementation in Tennessee

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- Addresses common knowledge deficits discovered in critical incident reviews.
  - Safe Systems Improvement Tool (SSIT) at the conclusion of the CIR.
    - Domains for professional, teams and environment.
    - Data is considered thematically as what may be teachable.
    - Past curriculums include: presence of bias in casework, teamwork and coordination, supervisory support, and medical assessment.

# Tennessee's Child Death Review

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- Qualitative
- Systems-Focused
- Supportive Inquiry
- Values and seeks to advance a Safety Culture
- Safe Systems Improvement Tool (SSIT) is the guiding assessment for all components of the Child Death Review process.

# Safe Systems Improvement Tool

## Professional



- Cognitive Fixation
- Stress
- Fatigue
- Knowledge Deficit
- Documentation
- Evidence

## Team



- Teamwork/Coordination
- Supervisory Support
- Production Pressure

## Environment



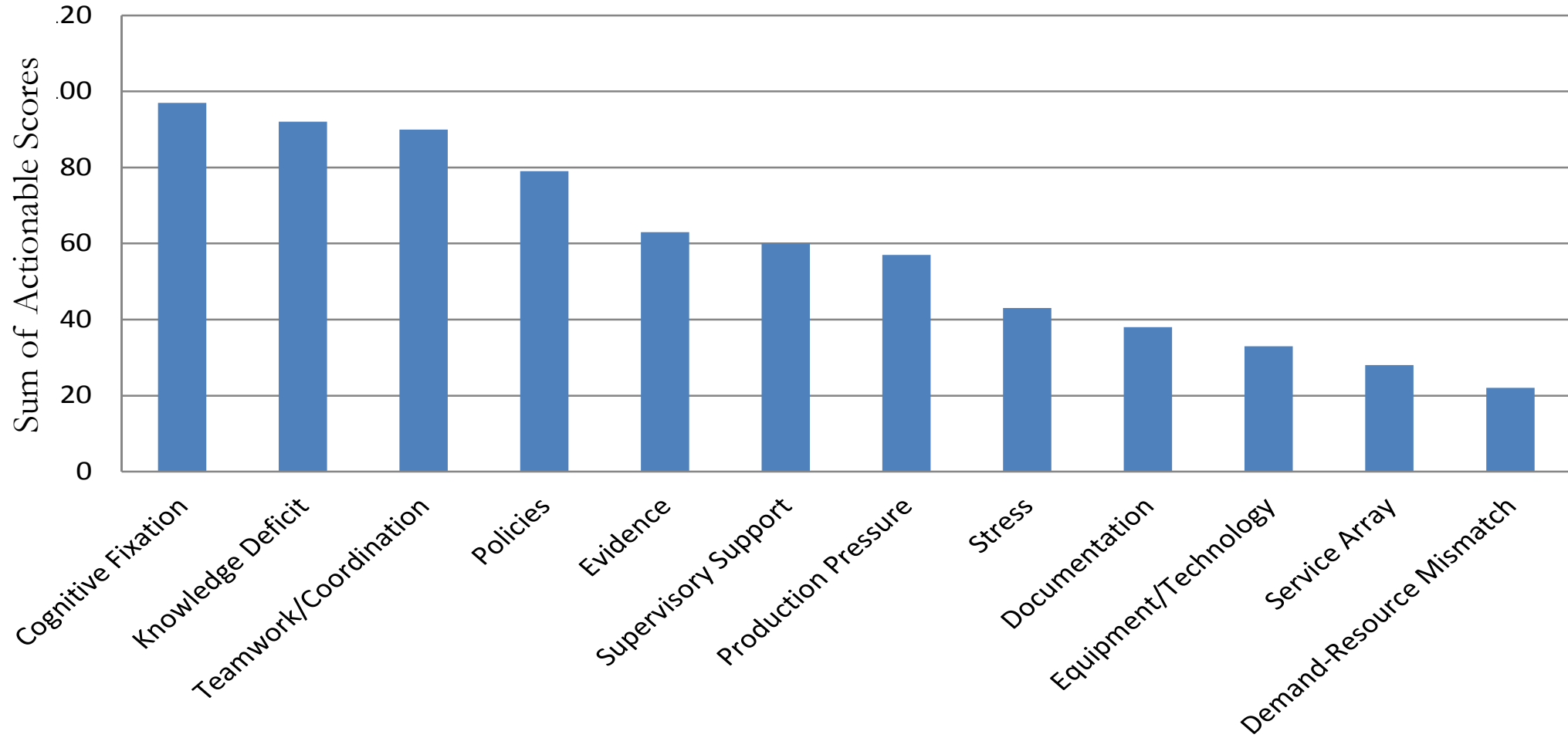
- Demand-Resource Mismatch
- Equipment/Technology
- Policies
- Service Array

## Key Observations

Recurrence Risk Score



# CY 2017 Child Death Review Findings

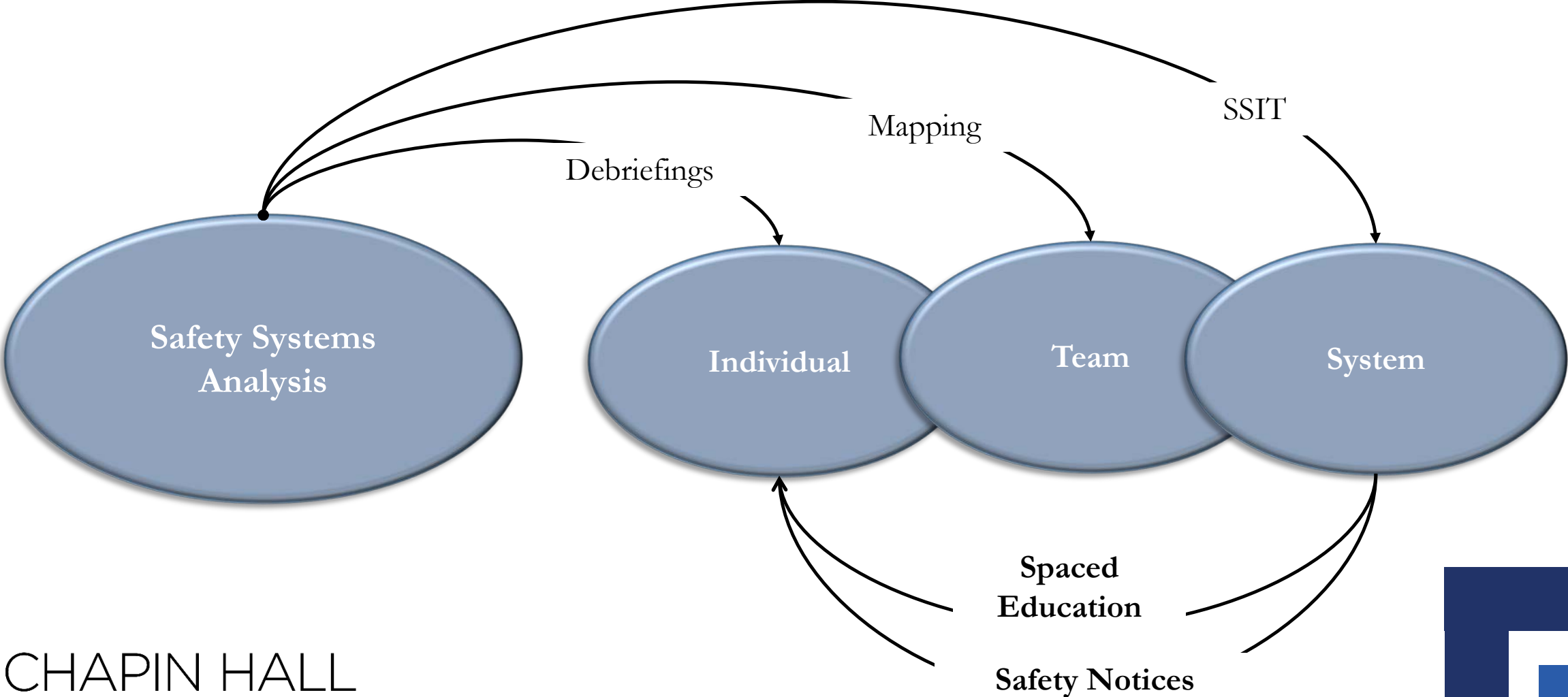


# SSIT: Knowledge Deficit Narratives

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- Case Manager was unaware of how to score the FAST accurately regarding mom's drug history.
- Case Manager practice (scoring generally on whether an item seemed actionable and establishing service array considered plausible) around the FAST 2.0 assessment affected inaccurate scoring.
- Cue questions were not asked regarding mental health, substance abuse, criminal history, and physical health; Case Manager scored zeros.
- Case Manager selected scores based on family “in services” not apart from services.

# Quality Improvement at all Levels



# Spaced Education Waves 1-3

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## Wave 1 (Pilot of two regions)

- CY 2015 (n=440)
  - Average RR/Week: 28%
  - Average % Correct: 72%

## Wave 2 (Four regions) CY 2016 (n=832)

- Average RR/Week: 30%
- Average % correct: 88%

## Wave 3 (Statewide)

- CY 2017 (n=2,580)
  - Average RR/Week: 45%
  - Average % Correct: 93%

# Tennessee's Most Recent Curriculum

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- Calendar Year 2018
  - Custodial and Non-custodial track sent to all DCS employees (n=2,654)
  - FAST curriculum – workers were not scoring tool correctly.
    - Average % correct on scoring questions was 59%
    - Average % correct on non-scoring questions was 84%
  - Runaway curriculum – several youth died on runaway in the previous year.
    - Average RR = 45%
  - 12 week curriculum
  - 1-week, 3-month, and 6-month post-test measure to assess retention.
  - Feedback collected at 6 and 12 weeks

# Wave 4 Results

Week	Sent	Responded (RR)
1	2,654	1,423 (54%)
2	2,654	1,422 (54%)
3	2,654	1,388 (52%)
4	2,654	1,369 (52%)
5	2,654	1,360 (51%)
6	2,654	1,320 (50%)
7	2,654	1,298 (49%)
8	2,654	1,287 (48%)
9	2,654	1,272 (48%)
10	2,654	1,247 (47%)
11	2,654	1,246 (47%)
12	2,654	1,194 (45%)
Completed All 12 Weeks		1,078 (41%)

# Wave 4 Results

Week	Sent	Responses	Response Rate
1	2,654	1,423	54%
2	Of the 1,423	1,375	97%
3	Of the 1,375	1,352	98%
4	Of the 1,352	1,321	98%
5	Of the 1,321	1,292	98%
6	Of the 1,292	1,250	97%
7	Of the 1,250	1,217	97%
8	Of the 1,217	1,200	99%
9	Of the 1,200	1,185	99%
10	Of the 1,185	1,153	97%
11	Of the 1,153	1,139	99%
12	Of the 1,139	1,078	95%

# Wave 4 Results

	Custodial (n=295)	
Week	% Correct	Post-Test % Correct
1	85%	90%
2	42%	61%
3	63%	54%
4	76%	70%
5	82%	77%
6	73%	76%
7	81%	91%
8	71%	77%
9	84%	93%
10	85%	83%
11	65%	60%
12	95%	99%

	Non-Custodial (n=368)	
Week	% Correct	Post-Test % Correct
1	74%*	73%*
2	81%	77%
3	75%	79%
4	76%*	77%*
5	80%	87%
6	41%*	42%*
7	49%*	60%*
8	95%	95%
9	87%*	93%*
10	89%	77%
11	90%	95%
12	19%*	17%*



# Qualitative Feedback from Wave 4

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- *“I think it has been kind of fun to do these! I think this is a good idea for staff.”*
- *“It causes me to think about scenarios and how certain things can result from something so therefore I am always thinking about the best solutions to a scenario with these.”*
- *“It has allowed me to think about procedures and verify if I am correct in my process for doing things.”*
- *“This is great because it serves as a reminder of things staff should be implementing in case reviews.”*

# Spaced Education for Quality Improvement

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- We envision a membership benefit that provides jurisdictions with the following:
  - A platform for critical incident review reporting
    - Allow for unique analysis of the systems factors related to the prevention of child deaths and near deaths.
    - Similar data systems in industries like aviation and healthcare promote safety and learning through reporting of errors and near misses.
  - Comparative critical incident and team culture data
  - Access to a library of Spaced Ed curricula

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