Improving Child Protection With Safety Science

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My plan...

1. Describe Safety Science, Safety Culture and High Reliability Organizations
2. Explain how principles of HRO can be applied to support a safety culture in Child Welfare
3. Discuss some of the tools and tactics we’re applying in Tennessee
What is Safety Science?
Safety Culture

A safety culture is one in which organizational values, attitudes, and behaviors support an engaged workforce and reliable service delivery.

Leaders within a safety culture:

– Balance systems and individual accountability
– Value open communication, transparency, and continuous learning and improvement
What do these tragedies have in common?

1. Turkish Air flight TK1951 received erroneous information from the plane’s radio altimeter system. The crew’s response resulted in a fatal crash that claimed the lives of 4 crew members and 5 passengers.

2. A 2 y/o girl is left unattended by her foster parents and drowns in the family’s swimming pool.
System Similarities

- Public trust
- Public oversight
- High risk decisions
- High consequence outcomes
- High profile

(Cull, Rzipnecki, O’Day & Epstein, 2013)
High Reliability Organizations

High-risk, high-consequence, organizations that function in hazardous, fast-paced, and highly complex technological systems essentially error-free for long periods of time.

Organizations that operate continuously under trying conditions and have fewer than their share of major incidents.

(Roberts, 1990; Weick & Sutcliffe, 2007)
HRO Characteristics

Principles of Anticipation
1. Preoccupation with failure
2. Reluctance to simplify
3. Sensitivity to operations

Principles of Containment
4. Deference to expertise
5. Resilience

(Weick & Sutcliffe, 2007)
HRO Examples

US Air Traffic Control System
Power Distribution Grids
Nuclear Aircraft Carriers
Submarines
International Banking

Where’s Healthcare?
Adverse Event Rates: US Hospitals
Adapted from Leape, 1998

Total lives lost per year

<table>
<thead>
<tr>
<th>Dangerous (&gt;1/1000)</th>
<th>Regulated</th>
<th>Ultra-Safe (&lt;1/100K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HealthCare</td>
<td>Driving</td>
<td>Scheduled Airlines</td>
</tr>
<tr>
<td>Mountain Climbing</td>
<td>Chemical Manufacturing</td>
<td>European Railroads</td>
</tr>
<tr>
<td>Bungee Jumping</td>
<td>Chartered Flights</td>
<td>Nuclear Power</td>
</tr>
</tbody>
</table>

Numbers of encounter for each fatality
Mistakes in Healthcare – IHI Video
Do we face similar challenges in Child Welfare? Society?
Deaths from Abuse and Neglect

Nationally estimated 1560 children died from abuse and neglect in 2010 or 2.07 children per 100,000 children in the general population.

This is an average of four children dying every day from abuse or neglect.
What are we losing?

72 Kindergarten classes

120 little league baseball teams

OKCPS Class of 2012
How does a Child Welfare system advance a safety culture?

Pursue a new lens
  – Bias, behavior, fallibility and system interaction
Ask new questions
  – What and why? Not, who and how?
Expect different preconditions for your work
  – Safe, engaged workforce with the tools to do their job
The Old View

• Professionals are supposed to get it right
• Bad things happen because people make mistakes
• People/Organizations that fail are bad
• Blame motivates being careful

(Dekker, 2008)
The New View

• Risk of failure is inherent in complex systems
• Risk is always emerging
• Not all risk is foreseeable
• People and systems are fallible
• Well-prepared professionals are crucial

(Dekker, 2008)
Let’s revisit these two cases?

1. Turkish Air flight TK1951 was given incorrect information from the planes radio altimeter systems. The crews response resulted in a fatal crash that claimed the lives of 4 crew members and 5 passengers.

2. A 2 y/o girl is left unattended by her foster parents and drowns in the family’s pool.
Expert Findings

• The length of B737 type training at THY, as well as procedural compliance at THY, appear to at least match industry standard.
• The Captain had close to 11,000 hours on the Boeing 737 alone. This combination of training standards and experience is apparently not enough to protect crews from the subtle effects of automation failures during automated, human-monitored flight.
• The documentation and training available for flight crews of the Boeing 737NG leaves important gaps in the mental model that a crew may build up about which systems and sensor inputs are responsible for what during an automatically flown approach.

(Dekker, 2009)
Expert Findings

• It is indisputable that OKDHS was well aware of the hazard associated with the pool.
• The home should never have been approved without a specific and shared understanding between OKDHS and the foster parents about the pool.
• The pool should have been removed or a suitably protective fence should have been placed around it.
• No children should ever have been placed in the home before one of these things happened.
• By failing to ensure that this hazard was either removed or mitigated, OKDHS violated CWLA and COA standards and its own policy.

Goad, 2011
“documentation and training available for flight crews leaves important gaps in the mental model that a crew may build up”

vs.

“Indisputable”, “should never”, “should have”, “failing to ensure”
A New View of Human Error

No longer seen as a cause
Seen as a Symptom

Not the end of our inquiry
The Beginning

Not a random or isolated event
Emergent Property from the System
Human Limitations – Video Exercise
How do we develop this new way of thinking AND learning?
TENNESSEE’S APPROACH

Best practices have been identified that support a safety culture:

– Enhanced surveillance
  (e.g., safety culture survey, event reporting, accident analysis)

– Better communication
  (e.g., teamwork, professionalism, child/family engagement)

– Reliable systems
  (e.g., bundles, predictive modeling, integrated presence)

(Hickson et. al., 2012; Singer & Vogus, 2013)
# Child Death Review: An Accident Model

## Safety Systems Map - Child Death/Near Death

**Case No.: W D 051813 SS 09/2613**

### Government and Regulatory Bodies

- School regulations require parent to enroll the child in transitional school

### External Factors

- School suspensions
- School not aware of child’s mental health issues
- Lack of provider agency collaboration regarding educational needs
- Lack of services in interim placements
- Limited documentation of provider activities throughout the case
- DGS requirement from court to do pre-transfer sentencing reports

### Organizational Factors (Central)

- Lack of cross-training among DGs disciplines (GFS, SS, JI)
- Training does not keep pace with best practice and refreshing essential skills sets
- TFACS not linking cases when involvement with family crosses disciplines (GFS, SS, JI)
- Limited placement resources close to home

### Organizational Factors (Regional)

- No collaboration with regional educational specialist
- Child driven:\n  - Allegation driven versus family focused casework
- Lack of cross-discipline communication and collaboration
- No case assignment following the exit JICM on TMLA
- Staffing and turnover limits ability to complete quality care transitions and cover cases during staff leave

### Conditions, Processes and Actor Activities

- Child not consistently in school, (S 1, 2, 3)
- Staff did not have any JI experience and had supervisor who did not have JI experience. (S2)
- JJ CM did not receive required JJ pre-service training. (S2)
- JJ CM not aware of additional case opened. (S3)
- No policy required monthly visits in March and April. (S2)
- Delay in treatment for subject child while in detention facility: Anger management, medication management, etc. (S2)
- Case received w/o transition meeting. (S2)

### Outcome

- Child Death
Measuring Our Safety Culture

Assessment of DCS’s safety culture supports communication. Our survey strategy will:

– Create a language to drive culture change
– Raise staff awareness about safety
– Identify opportunities for improvement
– Allow us to track change over time

(Edmondson, 2004; Kessler, 2013; Cull et. al., 2013)
What was our process?

Survey Construction
- 41 Item instrument consisting of 5 dimensions made of previously validated measures

Response Rate
- Distributed system-wide to case managers, team-leaders and team coordinators
- 70% response rate
Years of Experience

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage of Workforce</th>
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<tr>
<td>&lt; 1 yr</td>
<td>CM 0.563380282</td>
</tr>
<tr>
<td>1 - 5 yrs</td>
<td>CM 27.67186597</td>
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<tr>
<td>6 - 10 yrs</td>
<td>CM 29.6938186</td>
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<tr>
<td>11 - 15 yrs</td>
<td>CM 18.77527441</td>
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<tr>
<td>16 - 20 yrs</td>
<td>CM 4.043905257</td>
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<tr>
<td>&gt; 20 yrs</td>
<td>CM 6.585788562</td>
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<tr>
<td></td>
<td>TL/TC 0.563380282</td>
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<td></td>
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<td>TL/TC 12.11267606</td>
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<tr>
<td></td>
<td>TL/TC 21.97183099</td>
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</table>

(n=1365/354)
Hours Worked per Week
All Staff

- Dav
- KnoxShlby
- MC
- UC
- East
- Smky
- NE
- SC
- SW
- NW
- TV
- SIU

37.5 Hours

Standard full-time work week

(n=1365/354)
All Dimensions - All Regions
All Staff

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Percent Positive</th>
</tr>
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<tbody>
<tr>
<td>Stress Recognition</td>
<td>44%</td>
</tr>
<tr>
<td>Safety Organizing</td>
<td>39%</td>
</tr>
<tr>
<td>Psychological Safety</td>
<td>42%</td>
</tr>
<tr>
<td>Leader/Member Exchange</td>
<td>54%</td>
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<tr>
<td>Safety Climate</td>
<td>56%</td>
</tr>
</tbody>
</table>

High performing: percent positive > 90%
Problematic: percent positive < 60%

(n=1719)
All Dimensions - All Regions
Case Manager (CM) / Supervisor Comparisons (TL/TC)

High performing: percent positive > 90%
Problematic: percent positive < 60%

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<th>Psychological Safety</th>
<th>Leader/Member Exchange</th>
<th>Safety Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM</td>
<td>44%</td>
<td>38%</td>
<td>42%</td>
<td>56%</td>
<td>57%</td>
</tr>
<tr>
<td>TL/TC</td>
<td>46%</td>
<td>41%</td>
<td>43%</td>
<td>47%</td>
<td>53%</td>
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</table>

(n=1365/354)
Safety Organizing - All Regions

All staff

<table>
<thead>
<tr>
<th>Region</th>
<th>Percent Positive</th>
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</thead>
<tbody>
<tr>
<td>Dav</td>
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<tr>
<td>Knox</td>
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<tr>
<td>Shlby</td>
<td>40%</td>
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<tr>
<td>MC</td>
<td>32%</td>
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<tr>
<td>UC</td>
<td>39%</td>
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<tr>
<td>East</td>
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<tr>
<td>Smky</td>
<td>40%</td>
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<tr>
<td>NE</td>
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<td>NW</td>
<td>37%</td>
</tr>
<tr>
<td>TV</td>
<td>41%</td>
</tr>
<tr>
<td>SIU</td>
<td>45%</td>
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High performing: percent positive > 90%
Problematic: percent positive < 60%

(n=1719)
Safety Organizing Scale – Urban county
Case Manager (CM) / Supervisor Comparisons (TL/TC)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Percent Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOS Scale</td>
<td>CM: 34%  TL/TC: 48%</td>
</tr>
<tr>
<td>Preoccupation with Failure</td>
<td>CM: 43%  TL/TC: 56%</td>
</tr>
<tr>
<td>Reluctance to Simplify</td>
<td>CM: 45%  TL/TC: 63%</td>
</tr>
<tr>
<td>Sensitivity to Operations</td>
<td>CM: 39%  TL/TC: 70%</td>
</tr>
<tr>
<td>Commitment to Resilience</td>
<td>CM: 41%  TL/TC: 52%</td>
</tr>
<tr>
<td>Deference to Expertise</td>
<td>CM: 38%  TL/TC: 67%</td>
</tr>
</tbody>
</table>

High performing: percent positive > 90%
Problematic: percent positive < 60%

(n=128/27)
Preliminary Findings

High-levels of staff engagement/interest
- Response rate well above typical response for organizational surveys (40 – 50%*).
- 604 respondents provided comments.

Understanding risks associated stress and fatigue
- Case managers and supervisors report working on average 44 and 45 hours/week respectively.
- 56% of case managers and 54% of supervisors do not recognize the role stress and fatigue play in performance.

Organization of teams to anticipate and learn from unexpected events
- 62% of case managers and 59% of supervisors do not think their teams operate in a way that supports rapid detection and correction of errors and unanticipated events.

Psychological safety
- 58% of case managers and 57% of supervisors do not believe team members are accepted, treated with respect, or safe to take interpersonal risks.

Supervision model supporting system safety
- 44% of case managers and 53% do not believe their supervisor is interpersonally or professionally supportive or fair and unbiased in their decision-making.
- 43% of case managers and 57% do not believe the organization’s climate supports workforce engagement and quality care.

(*Brauch & Holton, 2008)
Focus Areas

1. Psychological Safety
2. Supervision model
3. Teamwork and Communication
Why Promote Teams in Child Welfare?
Changes in safety attitude and relationship to decreased postoperative morbidity and mortality following implementation of a checklist-based surgical safety intervention

Patterns of Communication Breakdowns Resulting in Injury to Surgical Patients

Safety culture assessment: a tool for improving patient safety in healthcare organizations

V F Nieva, J Sorra
Questions?

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www.mc.vanderbilt.edu/coe
Teams vs. Teaming

Teams are **social constructions** defined by:
- Common goal and a game plan
- Diverse roles that synergize
- Agreed upon behavioral norms
- Agreed upon attitudinal norms

Teaming is the **active process** of:
- Relating to others
- Listening to others’ points of view
- Making shared decisions
- Remaining vigilant of others needs, roles and perspectives

(Edmundson, 2012)
What Properties are Found in Effective Teams?

Shared mental model
- A mental picture or sketch of the relevant facts and relationships defining an event, situation, or problem.

Collective mindfulness
- The ability to rapidly detect and respond to unexpected events

Situational awareness
- The state of knowing the conditions that affect one's work

Psychological safety
- Team members feel accepted, respected and safe to take interpersonal risks

(Henrickson et. al., 2008; Edmundson, 2012)
What Behaviors Support Effective Teams?

Plan forward
  – Timeouts, Briefings, Huddles and Checklists

Reflect back
  – Scripted Debriefing

Communicate Effectively
  – Clear, concise, comprehensive and congruent (words match body language and expression)
  – Active listening
  – Use tools (SBAR, Repeat-back)

Promote Professionalism
  – Accountability and Critical Language

(Hickson et. al., 2011; Frankel, 2011)
Survey Dimensions

**Stress Recognition:** The recognition that stress and fatigue impact performance.

**Psychological safety:** The shared belief that team members are accepted, respected, and safe to take interpersonal risks.

**Leader-member exchange:** The two-way relationship between supervisors and subordinates that influences subordinates' responsibility, decision influence, access to resources, and performance.

**Safety Climate:** Perceived organizational attributes related to safety which may be induced by policies and practices.

**Safety Organizing:** The described preconditions that support rapid detection and correction of errors and unexpected events.
Safety Organizing

Preoccupation with failure: Chronic wariness of the unexpected

Reluctance to simplify interpretations: Questioning assumptions and received wisdom

Sensitivity to operations: Up-to-date knowledge of where expertise resides

Commitment to resilience: Deliberate learning from experience

Deference to expertise: Migrating decision-making to person with most expertise, not most authority

Vogus & Sutcliffe, 2007