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# TEAM MONITORING TOOLS: EMBAM & TBM

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An Australian Government Initiative





## OVERVIEW

- Research Development Team
- Background
- Literature Review
- Team Monitoring Tools
- Preliminary Evaluation
- Conclusion



- Dr Chris Bearman – Central Queensland Uni
- Dr Benjamin Brooks – University of Tasmania
- Dr Christine Owen – Learning Organization
- Heather Stuart – NSW State Emergency Service
- Mark Thomason – SA Country Fire Service
- Sandy Whight – Tasmanian Fire Service



- More Complexity
- Longer Duration
- More Dynamic
- More Agencies
- Increasing Technology
- Increasing Scrutiny



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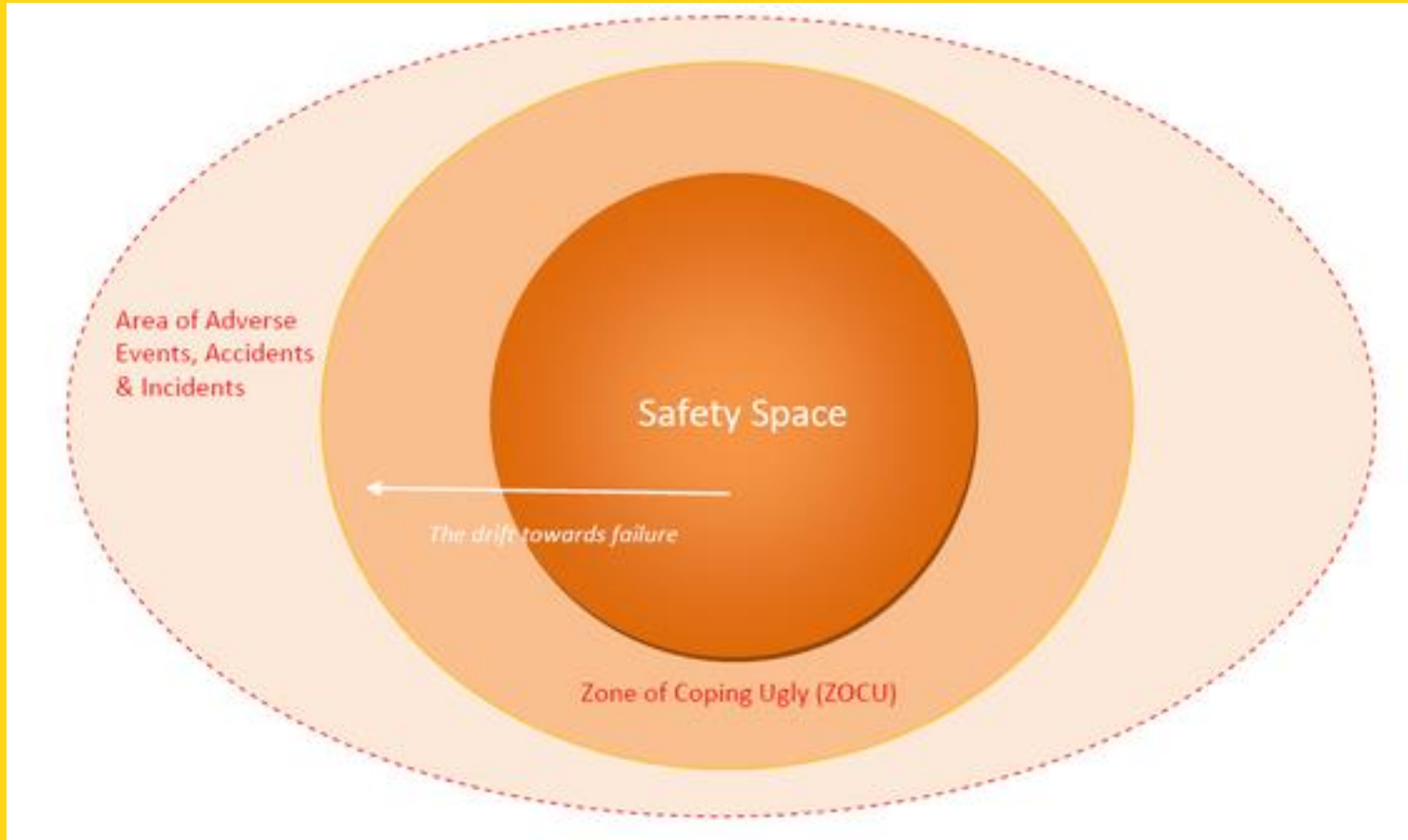


If we are going to ask people to operate in this environment we need to give them skills and tools to do so effectively.



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From Brooks (2014)



## LITERATURE REVIEW

1. Broad literature search (195 papers)
2. Referenced Papers (+78)
3. Exclusion Criteria (64)
4. Thematic Analysis





## APPROACHES TO TEAM MONITORING

- Team Outputs
- Information Flow
- Linguistic Markers
- Communication, Coordination, Cooperation





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# TEAM OUTPUTS (TO)



## TEAM OUTPUTS (TO)

- Benefits
  - Easy to use
  - Fast to apply
- Limitations
  - Fairly general
  - Doesn't consider team processes
  - Won't detect all problems



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# INFORMATION FLOW (IF)



## INFORMATION FLOW (IF)

- Benefits
  - Can identify team issues
- Limitations
  - Doesn't identify the problem
  - Context specific
  - Require base info
  - Time consuming



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# LINGUISTIC MARKERS (LM)



## LINGUISTIC MARKERS (LM)

- Benefits
  - Can identify team issues
- Limitations
  - Correlations
  - Context specific
  - Time consuming



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# COMMUNICATION, COORDINATION, & COOPERATION (3C)





## COMMUNICATION, COORDINATION, & COOPERATION (3C)

- Benefits
  - Can identify team issues
  - Detailed info about team
- Limitations
  - Its fairly complex
  - Difficult to observe
  - Context specific
  - Time consuming



## EVALUATION

- Comprehensiveness
  - 3C is the most comprehensive method
- Speed of use
  - 3C, IF & LM are fairly slow
  - TO is fast to use
- No single approach is suitable
- Can't use an off the shelf method



## TEAM MONITORING TOOLS

- Emergency Management Aide Memoire (EMBAM)
- Team Behavioural Markers (TBM)



## EMBAM - IDENTIFICATION

- Networks
- Missing Information
- Conflicting Expectations
- Intuition
- Familiarity



## TBM - COOPERATION

### Cooperation

Are team members showing a willingness to work as a team?

Do team members exhibit confidence and trust in fellow team members?

Are team members following team objectives without opting for independence?

Are any team members creating unnecessary conflict?

Are team members resolving any conflict effectively?



## EMBAM - RESOLUTION

- Delegate
- Resource
- Mentor
- Assert
- Replace



## PRELIMINARY EVALUATION STUDY

- Iterative design process
- Multi-agency response to a simulated aircraft accident
- 4 observers
- Semi-structured interview



## RESULTS

- EMBAM & TBM have potential
- TBM has a good range of questions
- Some questions didn't work so well
- TBM was a bit too long
- In EMBAM replacing staff should be the last option





## LATEST

- Tools are being used in 2 contexts
  - Training
  - Debrief





## CONCLUSION

- 4 approaches to team monitoring
- No single approach is without issues
- Can't use an off the shelf approach
- EMBAM & TBM were developed
- Preliminary evaluation is positive



# QUESTIONS

