S.T.A.R.T.T. Course – Simulated Trauma and Resuscitation Team Training Course

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Disclosures

- None

Objectives

- Following this presentation you will be able to:
  - Outline the origins of Crew/Crisis Resource Management (CRM)
  - Describe the S.T.A.R.T.T. Course
  - Discuss the future direction of the course and understand the challenges

October 30, 1935

- Boeing model 299
  - Crashed in test flight
  - Labeled as “too much plane for one man to fly”
  - Led to the development of flight checklists

December 29th, 1972

- Eastern Airlines Lockheed L-1011, Flight 401
  - 101 dead

March 27, 1977

- Tenerife Airport Disaster
  - 574 dead

December 28, 1978

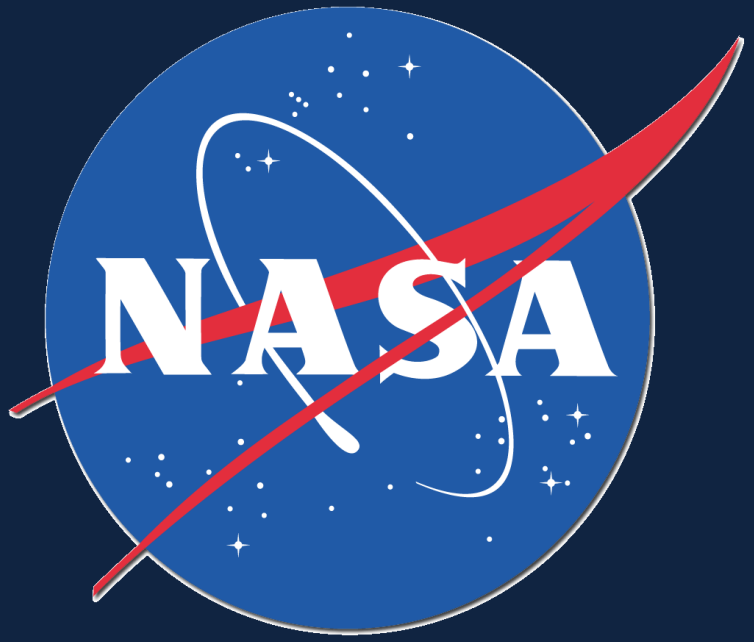
- United Airlines Flight 173
  - 10 dead 23 injured

Aftermath

- In all cases:
  - aircrafts were mechanically sound
  - crews were experienced and competent
  - poor crew interactions were a major factor

Crew Resource Management

- “Resource Management on the Flight Deck” sponsored by NASA in 1979
- Reduce pilot error by making better use of the human resources



Crew/Crisis Resource Management

- Teamwork
- Situational Awareness
- Resource Utilization
- Leadership
- Communication
- Decision Making

Airline Industry at Its Safest Since the Dawn of the Jet Age

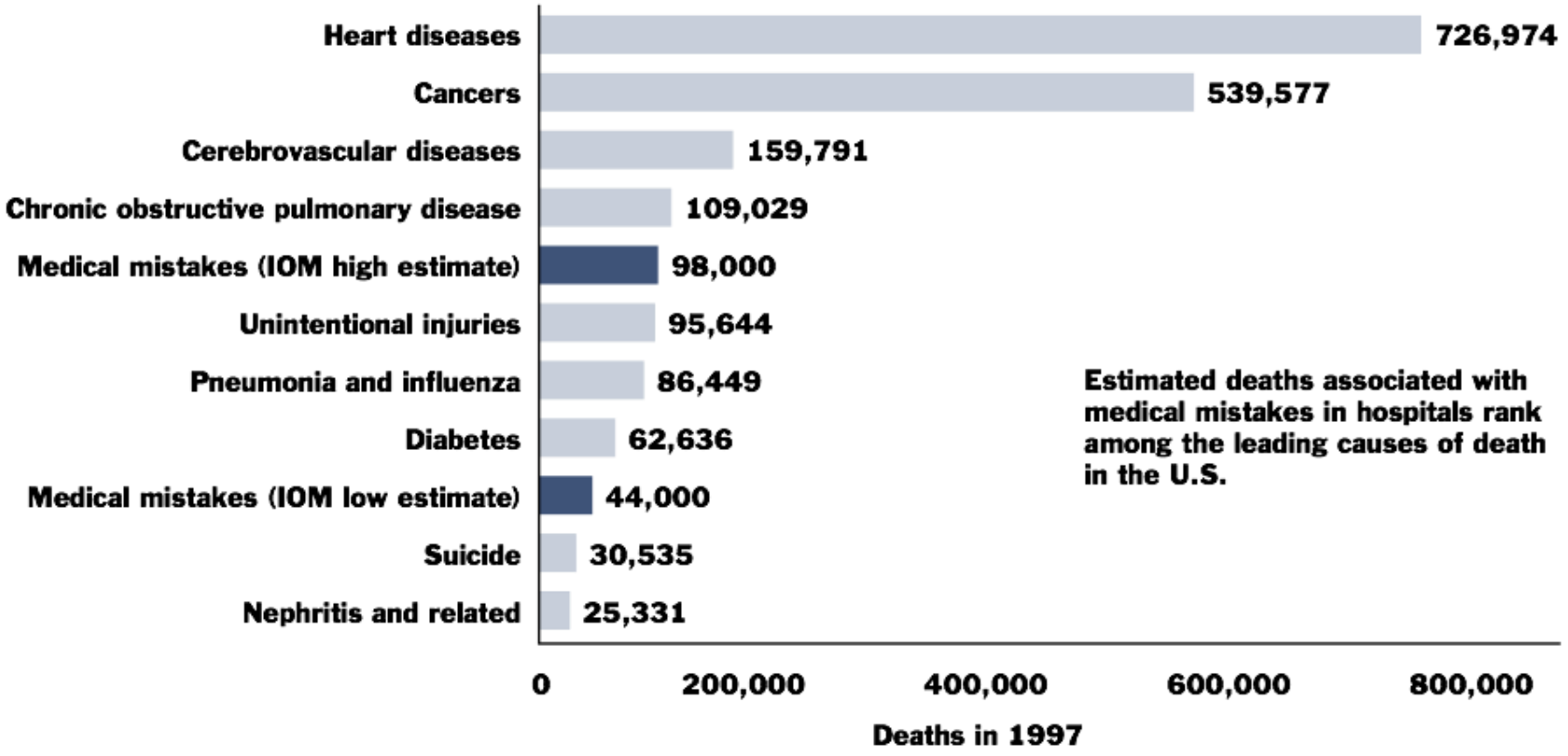
The New York Times

By JAD MOUAWAD and CHRISTOPHER DREW

Published: February 11, 2013 | 80 Comments

S.T.A.R.T.T. — Simulated Trauma and Resuscitation Team Training

Estimated Deaths Associated with Medical Mistakes Compared to the Leading Causes of Death in the U.S.



Sources: IOM 2000; Kramarow et al. 1999 (deaths).

CRM and Medicine

- Majority of errors are non-technical
  - leadership
  - resource use
  - team communication
  - situational awareness

Course Development

- Multidisciplinary Trauma CRM Course
- Designed by Canadian trauma surgeons, intensivists, emergency physicians and nurses
- Curriculum continues to be refined and developed

Course Description

- Not meant to replace ATLS
- builds on ATLS principles
- Focus on grooming effective and efficient trauma teams

- “Trauma is a Team Sport”

Course Description

- Participants divided into “trauma teams”
  - 4-6 physicians
  - 1-3 nurses
  - 1-2 respiratory therapist

Course Description

- Full day course
  - 2 introductory lectures
    - basic CRM principles and trauma team roles
  - “Trauma teams” rotate through 4 high-fidelity trauma simulations
    - no confederates - all trauma team members blinded
    - 15 min. scenario
    - 40 min. debriefing session

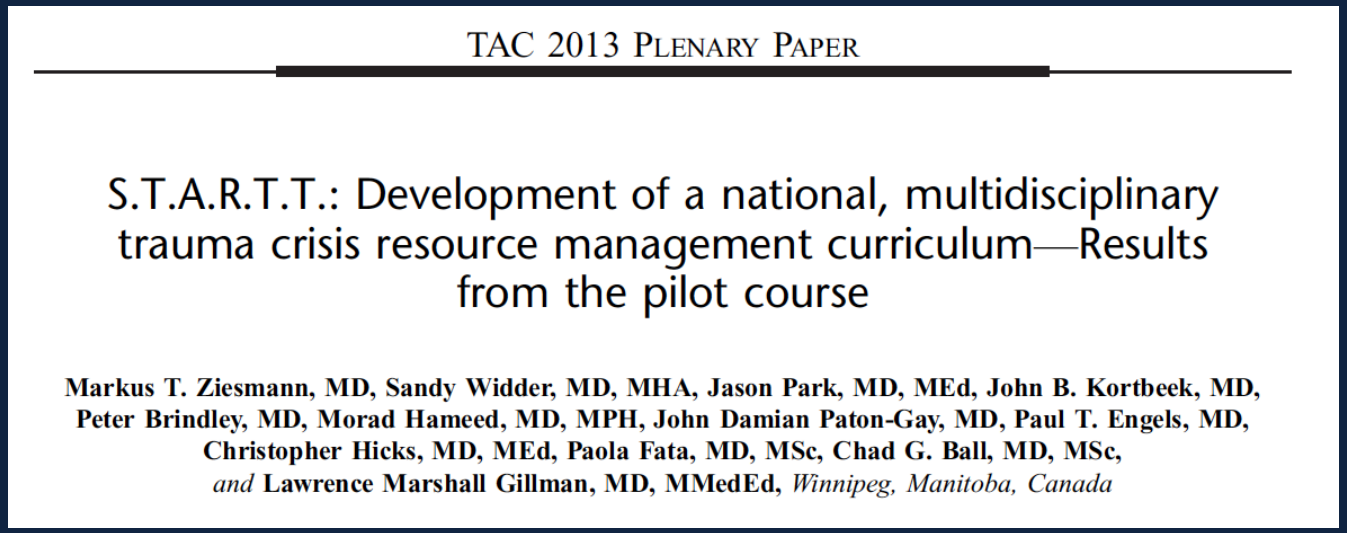
SIMULATED TRAUMA AND RESUSCITATION TEAM TRAINING
S.T.A.R.T.T.

Course Description

- Pilot course held at the Canadian Surgery Forum in Calgary (Sept 2012)
- 2nd course held at the Canadian Surgery Forum in Ottawa (Sept 2013)
- 3rd course held at TAC meeting in Montreal (April 2014)

S.T.A.R.T.T.

- Data from first course published in Journal of Trauma



TAC 2013 PLENARY PAPER

S.T.A.R.T.T.: Development of a national, multidisciplinary trauma crisis resource management curriculum—Results from the pilot course

Markus T. Ziesmann, MD, Sandy Widder, MD, MHA, Jason Park, MD, MEd, John B. Kortbeek, MD, Peter Brindley, MD, Morad Hameed, MD, MPH, John Damian Paton-Gay, MD, Paul T. Engels, MD, Christopher Hicks, MD, MEd, Paola Fata, MD, MSc, Chad G. Ball, MD, MSc, *and* Lawrence Marshall Gillman, MD, MMedEd, *Winnipeg, Manitoba, Canada*

J Trauma Acute Care Surg. 2013;75: 753–758

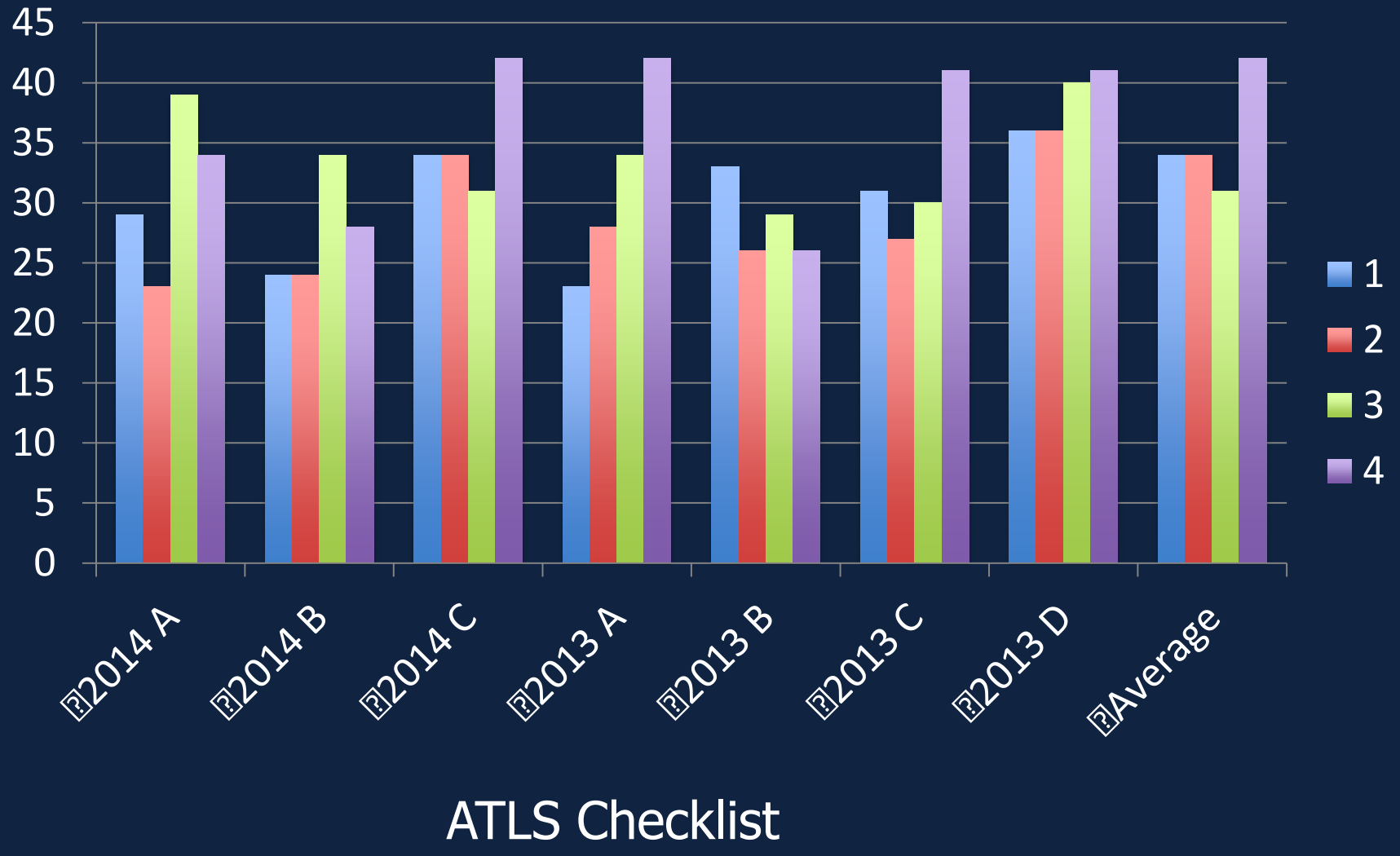
Evaluation

- Satisfaction with the course
- Pre-course and post-course survey
  - previously validated
  1. attitudes towards simulation
  2. attitudes towards CRM principles
     - 3 domains
       - teamwork, safety climate and stress recognition

	Pre Test Score Mean (SE)	Post Test Score Mean (SE)	P-value
Simulation training does not capture the complexity of reality.	2.448 (0.190)	1.690 (0.150)	P=0.001 *
Simulation training elicits a realistic response.	3.759 (0.154)	4.241 (0.094)	P=0.011 *
Simulation training does not provide a safe place to learn new skills .	1.448 (0.117)	1.414 (0.136)	P=0.813
Simulation training is a good way to practice without danger.	4.310 (0.158)	4.586 (0.105)	P=0.133
Simulation training creates an artificial environment.	3.276 (0.171)	1.793 (0.115)	P<0.001 *
Simulation training enhances the ability of participants to learn new skills.	4.103 (0.103)	4.345 (0.124)	P=0.032 *

	Pre Test Score Mean (SE)	Post Test Score Mean (SE)	P-value
Overall	136.31 (1.86)	140.38 (1.93)	P=0.004 *
Teamwork	69.14 (1.09)	72.07 (1.07)	P=0.002 *
Safety Climate	38.79 (0.52)	40.00 (0.65)	P=0.023 *
Stress Recognition	28.38 (0.49)	28.31 (0.55)	P=0.900

Compliance with ATLS Checklist



Ottawa GRS

OVERALL PERFORMANCE

1	2	3	4	5	6	7
Novice; all CM skills require significant improvement		Advanced novice; many CM skills require moderate improvement		Competent; most CM skills require minor improvement		Clearly superior; few, if any CM skills that only require minor improvement

I. LEADERSHIP SKILLS

1	2	3	4	5	6	7
Loses calm and control for most of crisis; unable to make firm decisions; cannot maintain global perspective		Loses calm/control frequently during crisis; delays in making firm decisions (or with cueing); rarely maintains global perspective		Stays calm and in control for most of crisis; makes firm decisions with little delay; usually maintains global perspective		Remains cal m and in control for entire crisis; makes prompt and firm decisions without delay; always maintains global perspective

II. PROBLEM SOLVING SKILLS

1	2	3	4	5	6	7
Cannot implement ABC's assessment without direct cues; uses sequential management despite cues; fails to consider any alternative in crisis		Incomplete or slow ABC assessment; mostly uses sequential management approach unless cued; gives little consideration to alternatives		Satisfactory ABC assessment; without cues; mostly uses concurrent management approach with only minimal cueing; considers some alternatives in crisis		Thorough yet quick ABC without cues; always uses concurrent management approach; considers most likely alternatives in crisis

III. SITUATIONAL AWARENESS SKILLS

1	2	3	4	5	6	7
Becomes fixated easily despite repeated cues; fails to re-assess and re-evaluate situation despite repeated cues; fails to anticipate likely events		Avoids fixation error only with cueing; rarely reassesses and re-evaluates situation without cues; rarely anticipates likely events		Usually avoids fixation error with minimal cueing; reassesses re-evaluates situation frequently with minimal cues; usually anticipates likely events		Avoids any fixation error without cues; constantly reassesses and re-evaluates situation without cues; constantly anticipates likely events

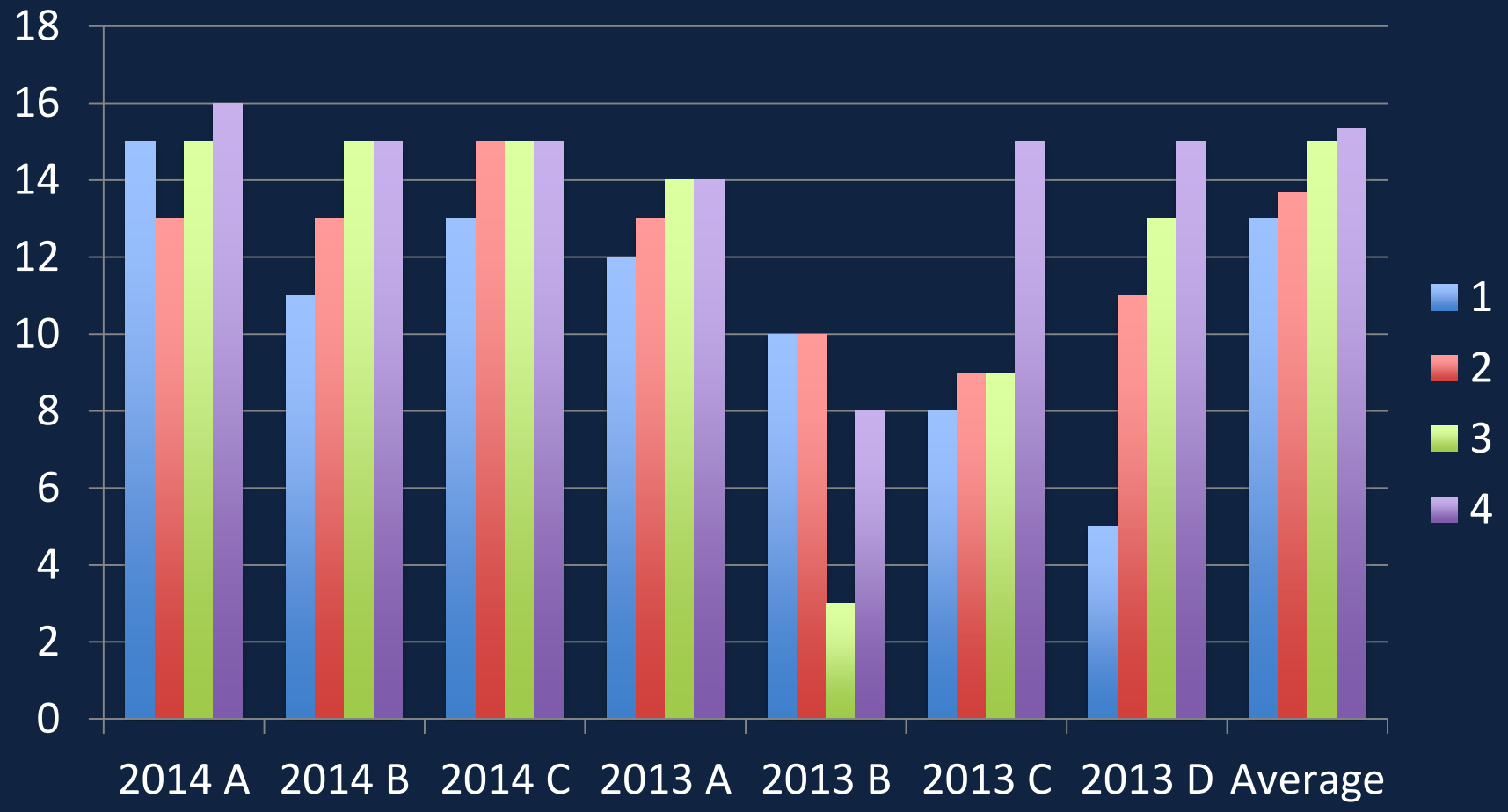
IV. RESOURCE UTILIZATION SKILLS

1	2	3	4	5	6	7
Unable to use resources & staff effectively; does not prioritize tasks or ask for help when required despite cues		Able to use resources with minimal effectiveness; only prioritizes tasks or asks for help when required with cues		Able to use resources with moderate effectiveness; able to prioritize tasks and/or ask for help with minimal cues		Clearly able to utilize resources to maximal effectiveness; sets clear task priority and asks for help early with no cues

V. COMMUNICATION SKILLS

1	2	3	4	5	6	7
Does not communicate with staff; does not acknowledge staff communication, never uses directed verbal/non-verbal communication		Communicates occasionally with staff, but unclear and vague; occasionally listens to but rarely interacts with staff; rarely uses directed verbal/ non-verbal communication		Communicates with staff clearly and concisely most of time; listens to staff feedback; usually uses directed verbal/ non-verbal communication		Communicates clearly and concisely at all times, encourages input and listens to staff feedback; consistently uses directed verbal/ non-verbal communication

CRM Performance

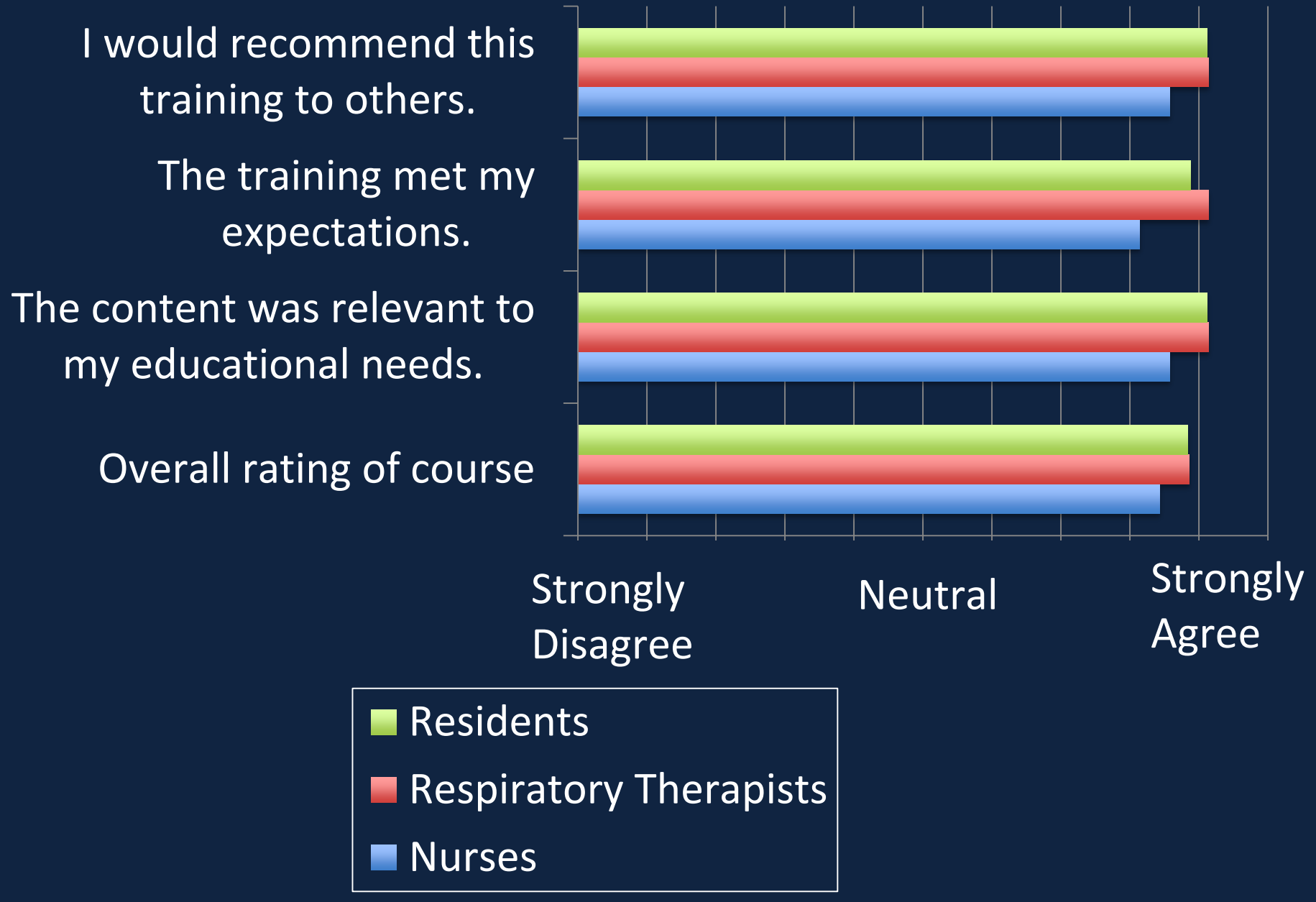


Ottawa GRS Scores

Satisfaction

- 60 participants so far
  - 14 RN's
  - 7 RT's
  - 39 MD's

- 98.4% "very good" or "excellent"
- 98.4% would recommend to colleagues


I would recommend this training to others.
The training met my expectations.
The content was relevant to my educational needs.
Overall rating of course
Strongly Disagree
Neutral
Strongly Agree
Residents
Respiratory Therapists
Nurses

I think bringing allied professionals together to learn is the most effective way to teach them how to work as a true trauma team. More simulation w safer more rewarding experience RTs and residents.

-ER Nu

Outstanding course – great at teaching the non-medical dimensions/complexities of trauma resuscitation and how and why they matter for patient outcomes. Thank you.

- Acute Care Surgery Fellow

A wonderful course. enjoyed the diverse felt it was a safe learn I learned a lot. Please

I had a great time! Excellent learning nity and I will take this back to my te!

- Respiratory Therapist

Excellent work. Very interesting and thought provoking with great attention to our learning needs. The course covered lots that we are not exposed to via normal residency training. Th

Great learning experience. value of the

Excellent course. Learned a lot about teamwork and communication skills. Very practical. Would take course again.

- Surgical Resident

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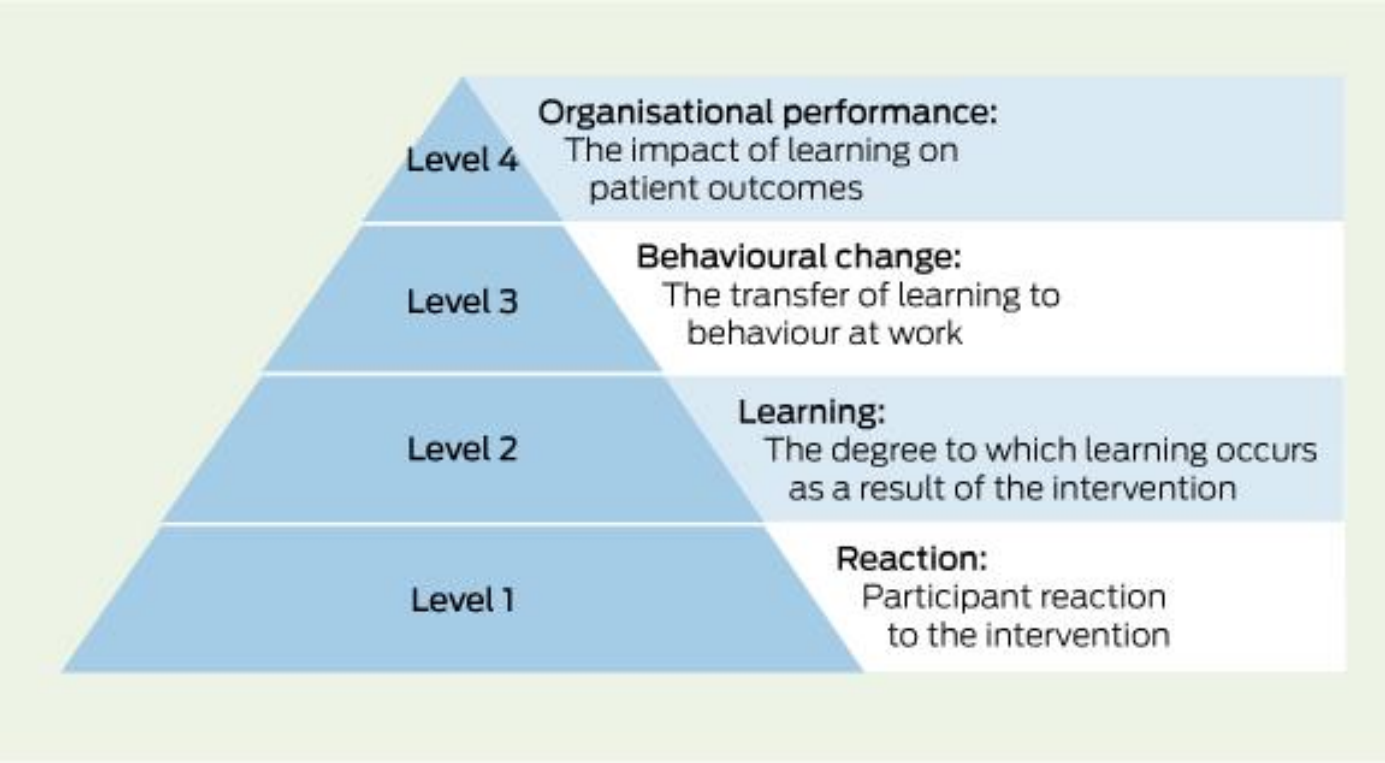
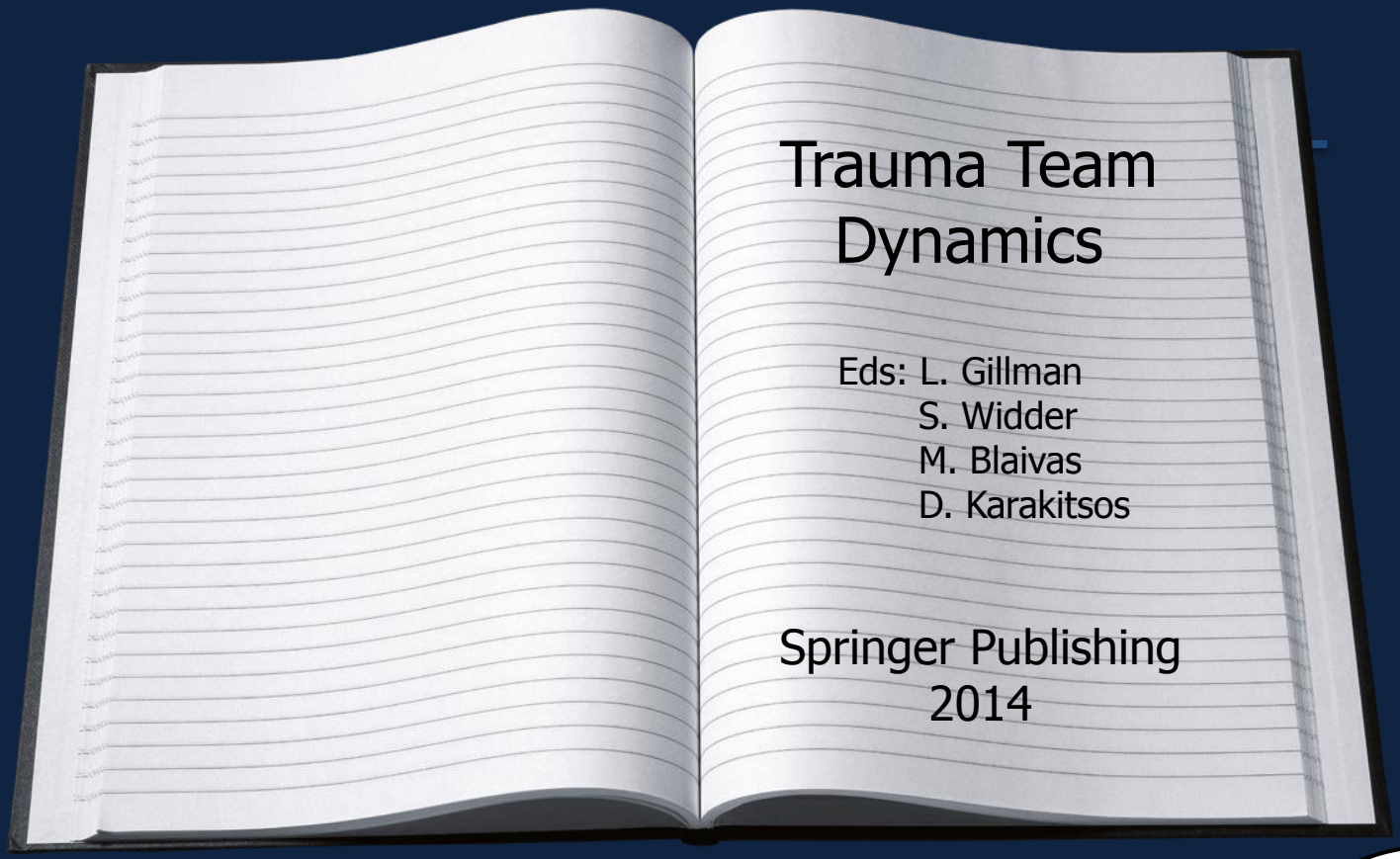
Kirkpatrick Hierarchy



The Future

- Vancouver, September 17, 2014

- Registration:
  - http://www.canadiansurgeryforum.com


Trauma Team
Dynamics
Eds: L. Gillman
S. Widder
M. Blaivas
D. Karakitsos
Springer Publishing
2014

Challenges Moving Forward

- “Course Fatigue”
- Cost/Funding
- Format of course?
  - National course versus exporting for local use
  - consistency/reproducibility in curriculum delivery

Challenges Moving Forward

- Training instructors
- Designing web-based/digital curriculum
- Making the course more portable and less resource intensive

Conclusions

- A national multi-disciplinary trauma CRM course
  - Is feasible
  - There is interest and high satisfaction
  - We are slowly establishing a formal curriculum
- Many unanswered question about the future direction

Thank You

Canadian Association of
General Surgeons
Association canadienne
des chirurgiens généraux

TAC
Trauma Association of Canada
Association Canadienne de Traumatologie

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SIMULATED TRAUMA AND RESUSCITATION TEAM TRAINING
S.T.A.R.T.T.

The S.T.A.R.T.T. Team

- Sandy Widder – Co Creator
- Scenario and Curriculum Committee
  - Paul Engels
  - Damian Paton-Gay
  - Peter Brindley

- Over 20 instructors and growing

Thank You