Integrated Training and the Rural Emergency Department: The CALS Approach
What drives the demand for ongoing clinical education?

- Licensing and regulation
  - TJC
  - Trauma designation
- Improving patient care, safety and outcomes
- Reducing cost of care
- Emergency (Disaster) Preparedness
- Desire for learning
- Professional satisfaction
Institute of Medicine 2001 *To Err is Human*

Medical errors cause between 44,000 and 98,000 deaths annually
AHRQ

- Team performance and training can help the medical community improve patient safety.

- Research has identified many of the competencies that are necessary for effective teamwork in medical environments.

- A number of proven instructional strategies are available for promoting effective teamwork
Content and context

• Knowledge base
• Skills
• Relevant problems
• Problem solving

• Replicated setting
• Realistic team roles
• Functional equipment
Context vs Content
By Type of Training

Corporate style
teamwork
training

Interdisciplinary
Hi Fidelity
Simulation

CALS Integrated
Team Training

CRM

Content

Rural Health Conference
THIS WOMAN HAS TO BE GOTTEN TO A HOSPITAL.

A HOSPITAL? WHAT IS IT?

IT'S A BIG BUILDING WITH PATIENTS, BUT THAT'S NOT IMPORTANT RIGHT NOW.
CRM Training for Medical Teams:

CRM is good for communication but lacking in content

Doumouras 2012
There is little high-grade evidence supporting the following rational beliefs:

• Training as a team improves team performance
• Advanced clinical education improves clinical outcomes
• Medical school produces better doctors than does law school
Integrated training: outcomes

• Team simulations improve OB crisis management outcome measures - B Robertson
• Significant improvement in team performance after a 28-day trauma refresher course, with scores approaching those of the expert teams - J Holcomb
• Interdisciplinary team training identifies discrepancies in institutional policies and practices. - P Andreatta
• Improvement in medical crisis team performance with team training – *(ACLS-trained people performed poorly prior to team training)* - M DeVita
## Integrated Training: Course comparisons

<table>
<thead>
<tr>
<th>COURSE</th>
<th>SUBJECT MATTER</th>
<th>TEAM - BASED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACLS</td>
<td>ADULT CARDIAC</td>
<td>SOMEWHAT</td>
</tr>
<tr>
<td>ATLS</td>
<td>TRAUMA</td>
<td>NOT REALLY; SEPARATE TRACKS</td>
</tr>
<tr>
<td>TNCC</td>
<td>TRAUMA, CRITICAL CARE</td>
<td>NO, NURSES ONLY</td>
</tr>
<tr>
<td>CALS</td>
<td>TRAUMA, PEDS, OB, MEDICAL</td>
<td>YES</td>
</tr>
</tbody>
</table>
Integrated Training: The CALS Approach
Integrated Training: The CALS Approach

• Comprehensive content
• Team-based/Highly contextual
  – Teams train together
  – Real/realistic scenarios
  – Cognitive and hands-on skills
• Promotes a Universal Approach
• Designed for rural/resource limited environments
CALS Resuscitation Diamond

- Emergency Skills and Knowledge
- Effective Provider Teams
- Patient-Focused Care and Systems
- Appropriate Equipment
Origin of the CALS Program

• Emergency and critical care provided in rural communities was not keeping pace with the advances being made in urban centers.
• Team project representing the whole emergency team (docs, nurses, PA/NP, EMT-P) with representatives of both rural and urban Family Medicine and Emergency Medicine providers.
• Development started in early 1990’s with the first course conducted in September, 1996.
Distribution of CALS Training - MN

- Provider Courses - 253 (> 5000 participants)
- Benchmark Labs - 500 (> 2000 participants)
- Trauma Modules - 56 (> 700 participants)
Distribution of CALS Training

Other States

- Wisconsin - 18 Provider Courses, 9 Benchmark labs, 2 Trauma Modules
- Texas – 7 Provider Courses
- Missouri – 4 Provider Courses
- Oklahoma – 2 Provider Course
- California – 1 Provider Course
Distribution of CALS Training
International

- Canada – 5 Provider Courses
- Haiti – 1 Provider Course
- Afri-CALS development

- US State Department: US Embassies
  - 26 Provider Courses ( > 1100 participants)
Distribution of CALS Training

Total Courses

- Provider Courses – 320 with 7264 participants
- Benchmark Lab - > 500 labs with > 2000 participants
- Trauma Modules – 59 with 781 participants
1. **Taking the CALS course has:**
   
   a. Improved teamwork in your ER
      
      **84% either agree or strongly agree**
   
   b. Improved your skills for tending to or treating critically ill/injured patients
      
      **96.3% either agree or strongly agree**
   
   c. Improved other staff’s skills for tending to or treating critically ill/injured patients
      
      **91.25% either agree or strongly agree**
   
   d. Improved your comfort and or confidence in managing the emergent patient
      
      **96.3% either agree or strongly agree**
   
   e. Had direct impact on improving patient care in your facility
      
      **86% either agree or strongly agree**
1. Which of the following CME courses have you completed in the past 8 years?

<table>
<thead>
<tr>
<th>Course</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALS (Comprehensive Advanced Life Support)</td>
<td>96.8%</td>
<td>121</td>
</tr>
<tr>
<td>ATLS (Advanced Trauma Life Support)</td>
<td>18.4%</td>
<td>23</td>
</tr>
<tr>
<td>ACLS (Advanced Cardiac Life Support)</td>
<td>76.8%</td>
<td>96</td>
</tr>
<tr>
<td>RTTDC (Rural Trauma Team Development Course)</td>
<td>4.0%</td>
<td>5</td>
</tr>
<tr>
<td>TNCC (Trauma Nurse Core Course)</td>
<td>35.2%</td>
<td>44</td>
</tr>
<tr>
<td>PALS (Pediatric Advanced Life Support)</td>
<td>45.6%</td>
<td>57</td>
</tr>
<tr>
<td>ENPC (Emergency Nursing Pediatric Course)</td>
<td>13.6%</td>
<td>17</td>
</tr>
<tr>
<td>ALSO (Advanced Life Support for Obstetrics)</td>
<td>9.6%</td>
<td>12</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>13.6%</td>
<td>17</td>
</tr>
</tbody>
</table>

answered question 125, skipped question 1
5. Consider the demands of your rural emergency practice. If you and your team could only take one course this year, which would you choose?

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<thead>
<tr>
<th>Course</th>
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<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALSO</td>
<td>2.5%</td>
<td>3</td>
</tr>
<tr>
<td>ACLS</td>
<td>9.8%</td>
<td>12</td>
</tr>
<tr>
<td>ATLS</td>
<td>6.6%</td>
<td>8</td>
</tr>
<tr>
<td>CALS</td>
<td>69.7%</td>
<td>85</td>
</tr>
<tr>
<td>ENPC</td>
<td>1.6%</td>
<td>2</td>
</tr>
<tr>
<td>RTTDC</td>
<td>3.3%</td>
<td>4</td>
</tr>
<tr>
<td>TNCC</td>
<td>6.6%</td>
<td>8</td>
</tr>
</tbody>
</table>

Please explain why you chose this course: Show Responses

122 answered question
Results of CALS Training in MN CAH

• Increased the speed and efficiency of transferring of critically ill/injured patients to higher levels of care. (The door to transfer time of critical injured patients in our CAH is now less than 40% of the time required pre-CALS.)

• Specifically increased the efficiency of handling of time-sensitive patient disorders: ACS, Strokes, Trauma (Golden Hour), Sepsis, Critical Airway Management. (The door to drug time in our stroke care patients is 47 minutes.)
Acceptance of CALS Training

- CALS is listed as appropriate rural trauma training in the Federal Flex Grant Program for Critical Access Hospitals.
- Many CAH use CALS training as accepted staff education in place of ACLS and ATLS training.
- CALS training is accepted in MN for trauma training in Level III and IV Trauma Centers for nurses & physicians.
- CALS training is accepted in WI for trauma training in Level IV Trauma Centers.
“Hospitals that have hosted or successfully completed a CALS course did have a significant head-start in preparation to meet most of the Level III & IV trauma facility criteria. Specifically, education, equipment, treatment, and transfer guidelines were largely in place.

The CALS philosophy of rapid assessment, stabilization, and definitive care decisions mesh nicely with the optimal care of the trauma patients.”
Acceptance of CALS Training (cont)  
[US Department of State]

• CALS training has been provided for over 1100 medical providers who work in the US Embassies throughout the world.

• CALS is the Emergency Care Training Course of choice for the US Department of State for the Embassy Medical Personnel.

• Larry Brown, MD, former Medical Director of the Dept of State and Foreign Service, stated after taking CALS, “It’s unanimous that CALS is among the best training we have ever had.”
Beyond the ED: US Embassies
Hurricane Katrina 2005
MN 1 DMAT: CALS Universal Approach
MN Health Dept MMU: CALS Trained Staff
Conclusions

• Demand for advanced clinical education is driven by regulation, patient safety, cost issues and desire for learning and professional satisfaction
Conclusions

• Hospitals, especially small hospitals, are best served by a team-based program that integrates high-value content with relevant and realistic context
Conclusions

• The CALS Program provides integrated team training specifically designed to meet the needs of rural hospitals and other resource-limited settings.