WORKSHEET for Evidence-Based Review of Science Debriefing

Worksheet author(s)

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Clinical question.

Intervention and prognosis

For healthcare professionals (P), do briefings (prior to) and/or debriefings (after a learning or patient care experience) (I), when compared to no briefings (C) , improve the acquisition of content knowledge, technical skills and behavioral skills required for effective and safe resuscitation (O).

Is this question addressing an intervention/therapy, prognosis or diagnosis? Educational intervention
State if this is a proposed new topic or revision of existing worksheet: New

Conflict of interest specific to this question

Do any of the authors listed above have conflict of interest disclosures relevant to this worksheet? NO

Search strategy (including electronic databases searched).

Resuscitation AND debriefing OR feedback Cochrane=1, EMBASE=40, PUBMED=15
Knowledge and skills and resuscitation and retention, EBM reviews=8, OVID= 59
Knowledge and skills and debriefing EMBASE=9, OVID=5
Knowledge and retention and debriefing EMBASE=1, OVID=0
Resuscitation and debriefing and retention EMBASE=1
Debriefing and knowledge, OVID=80, EMBASE=39
Debriefing and knowledge and skills, OVID=17, EMBASE=9

Final search Oct, 2009, no new articles added

- State inclusion and exclusion criteria

Inclusion knowledge and skills and resuscitation and retention and debriefing, English. Some general articles on debriefing including qualitative studies included.
Excluded articles that were commentaries, described cardiopulmonary resuscitation, debriefing for non acute situations.

- Number of articles/sources meeting criteria for further review:

A lot of overlap in the articles from different search strategies.
As there were no articles comparing debriefing with no debriefing articles comparing cognitive debriefing with debriefing have been included.
Anesthesia, trauma articles with code scenarios are included.
Total number of articles reviewed were 57 plus 28 selected by other authors.
Of these 21 are included in the worksheet.
Reviewed 28 additional articles selected by other 3 authors of debriefing worksheets. 10 of the 28 articles are included in the review.
This leaves a total of 31 articles placed on the grid
All feedback articles are considered LOE 5.

Summary of evidence

Evidence Supporting Clinical Question

Good	**Savoldelli 2006(E)**		**Edelson 2008(A)**	**Pope 2003(E)(F)**	**Bond2004(E)(F) Salas(2008)**
Fair	**Dine 2008(E)**			**De Vita 20059E) Halamek 2000(E) Mayo(2004)(E)**	**Abella 2007(E)(F) Bond 2006(E)(F) Clay 2007(E)(F) Farrell 2001(E)(F) Goffman 2008(E) Hoyt 1988(E) Marsch 2004(E)(F) Oh 2008(E)(F) Renzek 2003(E)(F)**
Poor	**Wayne(2005)(E**		**Wayne(2008)(E)**		**Falcone 2008(E) Hamilton 2005(E)(F) Ireland 2008(E)(F) Kramer-Johansen 2006(E)(F) Moorty 2005(E)(F) Pittman 2000(E)(F) Van Schaik 2008(E)(F)**
	1	**2**	**3**	**4**	**5**
Level of evidence					

A = Return of spontaneous circulation
B = Survival of event
F=Feedback
C = Survival to hospital discharge
D = Intact neurological survival
E = Other endpoint
Italics = Animal studies

Evidence Neutral to Clinical question

Good					**Larsson 1999(E)(F) Rudolph 2008(E) Rudolph 2007(E)**
Fair				**Mikrogianakis (2008)(Team function)(E)**	
Poor					
	1	**2**	**3**	**4**	**5**
Level of evidence					

A = Return of spontaneous circulation
B = Survival of event
C = Survival to hospital discharge
D = Intact neurological survival
E = Other endpoint
Italics = Animal studies

Evidence Opposing Clinical Question

Good					
Fair					
Poor					
	1	**2**	**3**	**4**	**5**
Level of evidence					

A = Return of spontaneous circulation
B = Survival of event
C = Survival to hospital discharge
D = Intact neurological survival
E = Other endpoint
Italics = Animal studies

REVIEWER'S FINAL COMMENTS AND ASSESSMENT OF BENEFIT / RISK:

1. There are no neonatal resuscitation studies comparing debriefing with no debriefing and looking at acquisition or retention of knowledge.
Wider approach was taken for this review to include debriefing and other forms of feedback such as simulated mannequin feedback. The studies of feedback are quoted separately. Some debriefing studies in situations other than resuscitation are also included.

2. It is important that debriefing be defined. Some authors (Wayne 2005 pg. 202 - 208, 2008 pg. 56 - 61) have used the term debrief to imply an opportunity for learners to ask questions. Others have alluded to the term debriefing without carefully defining it.
Debriefing can be after an educational event or after an actual resuscitation.

3. Debriefing can be done using slides and CD-ROM (Bond 2004 pg. 438 , Edelson 2008 pg. 1063), with cue cards using self debriefing cards (Clay 2007 pg. 738), videotaping (Hoyt 1988 pg. 435) without audiovisual feedback initially (Dine 2008 pg. 2817). Oral debriefing may be better than audiovisual (Salvoldelli 2006 pg. 279).

4. Debriefing can be technical or cognitive (Bond 2006 pg. 276 - 283). It can be with the team (DeVita 2005 pg. 326 , Edelson 2008 pg. 1063) or with individuals.
There is one randomized trial (Savoldelli 2006, 279) looking at impact of debriefing with favourable outcome in anesthesia residents.

Debriefing along with other communication and practical strategies improved performance for management of shoulder dystocia (Goffman 2008 pg. 294.), improved airway management (Mayo 2004 pg. 2422), ability to find equipment (Mikrogianakis 2008 pg. 761) and raised awareness of knowledge gaps (Mikrogianakis 2008 pg. 761).

Debriefing is well received(Halamek 2000 pg 819, Moorthy 2005 pg. 631) with some learners describing the positive experience, as good learning experience second only to direct patient interactions(Pope 2003 pg. 650).
However the studies that describe it as good experience do not provide data on whether there was better acquisition or retention of knowledge. Debriefing improves confidence amongst learners (van Schaik 2008 pg. 777)

In a survey it was found that following a failed pediatric resuscitation debriefing was commonly done. (Ireland 2008 pg. 328)

Cardiac arrest teams were offered de briefing, however only 7.7% accepted a formal debriefing session (Pittman 2001).

One study compared technical debriefing with cognitive debriefing and did interviews which showed that technical debriefing was better received (Bond 2006 pg. 276). (Larsson 1999 pg. 91) used debriefing to improve team performance.

Theoretical models have been developed for debriefing that provide guidance on how to carry out debriefing (Rudolph 2007 pg. 361, 2008 pg. 1010) and how to set up debriefing for medical teams (Salas 2008 pg. 518)
One investigator has provided a theoretical model for using debriefing for formative assessment (Rudolph 2008 pg. 1010).
Debriefing can be used to teach and clarify issues, however there are no studies showing improvement in learning.
Some of the articles discuss the role of debriefing in aviation and crisis management in the background for conducting studies (Reznek 2003 pg. 386).

It is unclear how often learner is in simulated environment, how they are debriefed (team versus individual) and how they are assessed.

Whether debriefing will improve knowledge acquisition and retention in neonatal resuscitation is a gap in science.
Adults training for BCLS, anesthetists and residents in code teams demonstrated an improvement in cardiac compressions with feedback. (Abella 2007 pg. 54 , Kramer-Johansen 2006 pg. 283 , Oh 2008 pg. 273) Both the depth and rate of cardiac compressions was better when they learned with feedback. (Abella 2007 pg. 54).

Cannot comment on the role of debriefing (learning, retention, assessment) or on how it should be done without additional studies.

The only study identified that reported risks associated with debriefing was that by Marsch (2004 51) that reported participants of unsuccessful teams became very emotional

No risks of debriefing have been reported. In one study (Marsch 2004 pg. 51) reported that participants of unsuccessful teams became very emotional.

Acknowledgements:

Citation List

1. Abella, B. S., D. P. Edelson, et al. (2007). "CPR quality improvement during in-hospital cardiac arrest using a real-time audiovisual feedback system." Resuscitation **73**(1): 54-61.

   COMMENTS: Pre and post cohort design.This is study with sensing real time feedback. There was no true debriefing. Investigators provided audio visual feedback and were trained in feedback. The ability to correctly provide chest compressions improved with this method of feedback. Adult study with no difference in return of spontaneous circulation or survival.
   LOE 5 fair,supportive

2. Bond, W. F., L. M. Deitrick, et al. (2004). "Using simulation to instruct emergency medicine residents in cognitive forcing strategies." Acad Med **79**(5): 438-46.

   COMMENTS: Scenarios were not resuscitation. However article is included because they studied the avoidance of errors and in general how to create experts. The simulation scenario was renal failure patient presenting with hyperkalemia and difficulty breathing. The patient required airway support, succinyl choline and acute treatment of hyperkalemia in adults. A qualitative design with debriefing using a CD-ROM and slides. Surprisingly the residents ranked this experience next best to direct patient care. Investigators developed a tool that provided debriefing without an instructor having to be present for the entire debriefing experience.
   LOE 5 Good, supportive

3. Bond, W. F., L. M. Deitrick, et al. (2006). "Cognitive versus technical debriefing after simulation training." Acad Emerg Med **13**(3): 276-83.

   COMMENTS: Not resuscitation. Investigators compared technical debriefing to concept designed to bring out vertical failure. The scenarios were 2 adult patints one a trauma patient requiring resuscitation and another 80 year old women with increased confusion. The vertical failure in the latter is to treat for sepsis and not think of other causes of change in mentation. Technical and cognitive debriefing were both done with a power point presentation with audio. Technical debriefing was better received in a qualitative interview with ethnographer. No evidence is presented that either group making more comments regarding technical or cognitive behaviour performed better as there is no follow up.
   LOE 5 Fair, supportive

4. Clay, A. S., L. Que, et al. (2007). "Debriefing in the intensive care unit: a feedback tool to facilitate bedside teaching." Crit Care Med **35**(3): 738-54.

COMMENTS: Study was done in an adult intensive care unit. Authors claim the way they debriefed it was at '0' cost compared to OSCE, Simulation and chart reviews. They designed validated debriefing cards and randomized residets to debriefing and no debriefing group. The residents used the debreifing cards to go over their performance with the fellow. Number of cards used correlated with change in change in self confidence. The total number of debriefing cards used was a mean of 2.6/5 so given there were onlt 18 residents the numbers are very small. This is a feasability study and authors conclusions reflect that.
LOE 5 Fair, supportive

5. DeVita MA, Schaefer J, Lutz J, Wang H, Dongilli T. (2005). "Improving medical emergency team (MET) performance using a novel curriculum and a computerized human patient simulator." Qual Saf Health Care **14**(5):326–331.

COMMENTS: The authors studied the effect of organization and specified roles and goals on survival of the mannequin. Debriefing focused on assuming a specific role, completing the associated task and cooperation. Organization, teamwork and crisis resource management were emphasized. At the end of the debriefing each team reviewed strategies to improve performance. Task completion rates improved with the third scenario. It is difficult to tease out which part of the training was responsible for the improvement. Assigning tasks with practice can improve outcomes. Debriefing can improve outcomes. However over all they showed improvement so one would have to assume that debriefing had some role to play in improving functioning of the team.
LOE 4 Fair, supportive

6. Dine, C. J., R. E. Gersh, et al. (2008). "Improving cardiopulmonary resuscitation quality and resuscitation training by combining audiovisual feedback and debriefing." Crit Care Med **36**(10): 2817-22.

COMMENTS: Adult resuscitation study. Randomized. Studied simulated cardiac arrest and measured rate and depth of cardiac compressions, they did not study over all performace of resuscitation. They had one group that received audiovisual feedback, the debriefing group did not receive audiovisual feedback.Both groups had baseline data collected, then they were divided into group that received audiovisual feedback and the debriefing group only. Following the second exposure both received debriefing and then third encounter again debriefing only group had no feedback while the audiovisual group had feedback. Both their groups showed improvement in cardiac comressions, the improvement was more marked in the group receiving debriefing and audiovisual feedback. They did not have a group that received no debriefing or audio visual feedback.
LOE 1 Fair, support

7. Edelson, D. P., B. Litzinger, et al. (2008). "Improving in-hospital cardiac arrest process and outcomes with performance debriefing." Arch Intern Med **168**(10): 1063-9.

COMMENTS: Adult study on patient ROSC. Before and after design. Their debrefing was well designed to go over the patient data collected during the arrest. Investigators made slides on the defficiencies identified. Debfiefing was collective but it is unclear if the students with defficiencies were identified or they were expected to know the patients they were involved with. There was a lot of preparation time spent by the investigators preparing for the debriefing session that took about 45 minutes. 30 minutes of this was specific patient discussions and 15 minutes general discussions. They had an improvemnet in ROSC in the time period debrefing was occuring. This could have been due to

new guidelines 2005 or residents being more aware that their resuscitation was going to be discussed. There was no improvement in survival.
LOE 3 Good, supportive

8. Falcone, R. A., Jr., M. Daugherty, et al. (2008). "Multidisciplinary pediatric trauma team training using high-fidelity trauma simulation." J Pediatr Surg **43**(6): 1065-71.

   COMMENTS: Pediatric trauma scenarios. Multiple simulation exercises with debriefing. The decrease in errors could be due to multiple oppurtunities to practise as a team. Specifis effect of debriefing is not studied. They showed an improvement in team performance with their training.
   LOE 5 Poor, Supportive

9. Farrell M, Ryan S, Langrick B. (2001). "'Breaking bad news' within a paediatric setting: an evaluation report of a collaborative education workshop to support health professionals." J Adv Nurs **36**(6):765-75.

   COMMENTS: A qualitative study looking at the effects of role playing, scenarios and debriefing to learn how to break bad news. The general commets from the participants were favourable. However it is not possible to sepatate out the comments regarding the role playing versus debriefing. There was one comment that suggested video taping would have been more helpful for debriefing.
   LOE 5 Fair, supportive

10. Goffman D, Heo H, Pardanani S, Merkatz IR, Bernstein PS. (2008). "Improving shoulder dystocia management among resident and attending physicians using simulations." Am J Obstet Gynecol **199**(3):294.e1-5. Epub 2008 Jul 17.

    COMMENTS: This study looked at improving maneuvers, communication and overall performance judged on on a 5 point Likert scale. They tried to assess management of shoulder dystocia before and after brief lecture on shoulder dystocia, review of basic maneuvers, discussions on optimizing team performance, review of key componenets of documentation and review of digital recording of simulations and discussions. All these factors combined improved the maneuvers , communication and overall performace in residents and coomunication and overall performance in attendings. Debrifing cannot be separated out from all the interventions they used.
    LOE 5 Fair, supportive

11. Halamek L, David M. Kaegi, David M. Gaba, Yasser A. Sowb, Bradford C. Smith, Brian E. Smith and Steven K. Howard. (2000) "Time for a New Paradigm in Pediatric Medical Education: Teaching Neonatal Resuscitation in a Simulated Delivery Room Environment." Pediatrics 106.4: 819-824.

COMMENTS: Investigators present the development of a program and have answers in it related to role of debriefing.They discus role of debriefing in clarifying issues, allowing for self critique and enhancing knowledge. 100% of their partcipants agreed that debriefing enhanced knowledge.There was no follow up or determination if it actually enhanced knowledge acquisition or retention. Only neonatal study in the literature commenting on how debriefing was received.
LOE 4 Fair, supportive

12. Hamilton, R. (2005). "Nurses' knowledge and skill retention following cardiopulmonary resuscitation training: a review of the literature." J Adv Nurs **51**(3): 288-97.

COMMENTS: A literature sample is provided. Overall investigators were looking for factors that enhance knowledge and skill retention during CPR. Provides an overview of teaching approaches such as video self instruction, peer tuition, cardiac arrest simulation, action cards, computer aided learning. Not really a systematic analysis.
LOE 5 Poor, supportive

13. Hoyt DB, Shackford SR, Fridland PH, Mackersie RC, Hansbrough JF, Wachtel TL, Fortune JB. (1988). "Video recording trauma resuscitations: an effective teaching technique." J Trauma **28**(4):435-40.

COMMENTS: They demonstrated that videotaping can be done without interfering with resuscitation.Weekly review of resuscitations with debriefing contributed to decreased wasted time, Increased attention to priorities and the attendees felt that they changed their delivery of care. This article demonstrates that overall education can improve delivery of care. They did have a control group. Improvement cannot be assigned to debriefing however that was one of the main methods they used to improve outcome.
LOE 5 Fair, supportive

14. Ireland, S., J. Gilchrist, et al. (2008). "Debriefing after failed paediatric resuscitation: a survey of current UK practice." Emerg Med J **25**(6): 328-30.

COMMENTS: This article is included to demonstrate that following a failed pediatric resuscitation debriefing is commonly undertaken. Guidelines are not well developed . It is not clear from the survey if the debriefing helped enhance knowledge retention or not.
LOE 5 poor, supportive

15. Kramer-Johansen, J., H. Myklebust, et al. (2006). "Quality of out-of-hospital cardiopulmonary resuscitation with real time automated feedback: a prospective interventional study." Resuscitation **71**(3): 283-92.

COMMENTS: Adults. Historical comparison group. The defibrillator in the study group provided verbal and auditory prompts. Half way through the study they added a prompt for inaction. Overall the quality of compressions improved and they suggested that the increased compression depth was assosiated with increased short term survival. No separate debriefing. Included because there was regular feedback.
LOE 5 Poor, feedback supportive

16. Larsson, G., E. L. Tedfeldt, et al. (1999). "Conditions affecting experiences of the quality of psychological debriefings: preliminary findings from a grounded theory study." Int J Emerg Ment Health **1**(2): 91-7.

COMMENTS: Qualitative study of fire fighters.Investigators discuss conditions effecting debriefing such as : 1.A secure leader, who is flexible, knowledgeable, sincere 2. Group security 3. Participant factors 4. Management/ organizational support.
LOE 5 Good, neutral

17. Marsch SC, Müller C, Marquardt K, Conrad G, Tschan F, Hunziker PR. (2004). "Human factors affect the quality of cardiopulmonary resuscitation in simulated cardiac arrests." Resuscitation **60**(1):51-6.

COMMENTS: They studied task distribution defined as clarification of role of the team members in the first 5 minutes and leadership behavior as any 2 of the following- Let the team know what is expected of them, decides what should be done, how they should be done and assign tasks. They used debriefing after completion of the simulation. However the questions for debriefing were very specific what kind of scenario, what should be done and have you been involved in cardiac arrest before. After the questions the videos were jointly watched. Participants of unsuccessful teams were at times quite emotional when they viewed their poor performance. 10 of the 16 teams failed. There was no follow up to study the impact of debriefing. They concluded that absence of leadership behaviour and absence of explicit task distribution were associated with poor team performance; however there is no discussion if debriefing improved these skills.
LOE 5 Fair, supportive

18. Mayo PH, Hackney JE, Mueck JT, Ribaudo V, Schneider RF. (2004). “Achieving house staff competence in emergency airway management: results of a teaching program using a computerized patient simulator.” Crit Care Med **32**(12):2422-7.

COMMENTS: The investigators were teaching emergency airway management. They did systematically demonstrate that debriefing following the first encounter improved airway management skills.
LOE 4 Fair, support

19. Mikrogianakis A, Osmond MH, Nuth JE, Shephard A, Gaboury I, Jabbour M. (2008). “Evaluation of a multidisciplinary pediatric mock trauma code educational initiative:a pilot study.”J Trauma **64**(3):761-7.

    COMMENTS: Even though the residents self reported more comfort and ability to find equipment there was no improvement in team functioning after the debriefing and delivery of educational content. This suggests that debriefing as a teaching tool was not effective in improving team functioning. Details of debriefing technique are not provided other than it was led by the session moderator and involved each team member.
    LOE 4 Fair, neutral

20. Moorthy, K., Y. Munz, et al. (2005). "A human factors analysis of technical and team skills among surgical trainees during procedural simulations in a simulated operating theatre." Ann Surg **242**(5): 631-9.

    COMMENTS: Surgery simulation. They used debriefing to assess the simulation. Only 67% of the trainees were debriefed. Those that were debriefed considered the simulation and debriefing useful.
    LOE 5 Poor, Supportive

21. Oh, J. H., S. J. Lee, et al. (2008). "Effects of audio tone guidance on performance of CPR in simulated cardiac arrest with an advanced airway." Resuscitation **79**(2): 273-7.

    COMMENTS: This was a feedback study that showed skill acquisition was improved with audio feedback. There was no true debriefing.
    LOE 5 fair, supportive of feedback

22. Pittman, J., B. Turner, et al. (2001). "Communication between members of the cardiac arrest team--a postal survey." Resuscitation **49**(2): 175-7.

COMMENTS: A survey looking at debriefing of a cardiac arrest team. 55% response rate of questionnaires. Formal communication between team members only occured 67% of the time. Team did think communication was important for giving positive feed back and encouraging team improvement, highlighting potential problems and task allocation. Even though debrief sessions were offered to team after an arrest only 7.7% this was done formally.
LOE 5 Poor, supportive

23. Pope, C., A. Smith, et al. (2003). "Passing on tacit knowledge in anaesthesia: a qualitative study." Medical Education **37**(7): 650-655.

COMMENTS: Qualitative study, anesthetists.Included as there were comments such as “the experiences of having to define and articulate anesthetic practise to the researchers, and of reading transscripts of observations has been one of the richest experiences of my career. They do not discuss if the experience changed the practice. However debriefing was well received and a positive experience.
LOE 4 Good, supportive

24. Reznek, M., R. Smith-Coggins, et al. (2003). "Emergency medicine crisis resource management (EMCRM): pilot study of a simulation-based crisis management course for emergency medicine." Acad Emerg Med **10**(4): 386-9.

COMMENTS: Study designed to demonstarte how participents accepted crisis management. Specifically the comment on debriefing was ‘debriefing sessions clarified important crisis management issues 4.3 (strongly agree=5). This was done to assess if Emergency medicine crisis resource mamangement would be feassible as it has been with airline industry and anesthesia.
LOE 5 Fair, supportive

25. Rudolph, J. W., Robert Simon, Daniel B. Raemer, Walter J. Eppich, (2008). "Debriefing as Formative Assessment: Closing Performance Gaps in Medical Education." Academic Emergency Medicine **15**(11): 1010-1016.

COMMENTS: Theoretical article discusses using debriefing as a formative assessment. Discusses formative assessment-observe gap between desired and observed performance---provide feedback about performance gap---investigate basis for performace gap---help close gap through discussions and diadactics.
LOE 5 Good, Neutral

26. Rudolph, J. W., R. Simon, et al. (2007). "Debriefing with good judgment: combining rigorous feedback with genuine inquiry." Anesthesiol Clin **25**(2): 361-76.

COMMENTS: Theoretical article gives the reasons why rigorous feedback debriefing process helps resolve the clinical and behavioral dilemmas brought to the surface by simulation exercises.
LOE 5 Good, Neutral

27. Salas E, Klein C, King H, Salisbury M, Augenstein JS, Birnbach DJ, Robinson DW, Upshaw C. (2008). “Debriefing medical teams: 12 evidence-based best practices and tips.” Jt Comm J Qual Patient Saf **34**(9):518-27.

COMMENTS: Description of how to set up debriefing and review video recordings. This is a summary article.
LOE 5 Good, supportive

28. Savoldelli, G. L., V. N. Naik, et al. (2006). "Value of debriefing during simulated crisis management: oral versus video-assisted oral feedback." Anesthesiology **105**(2): 279-85.

COMMENTS: Randomized study using cardiac arrest scenarios. 3 groups.Surprisingly the oral debrief did better then video-assisted and debriefing compared to controls. The authors suggest this could be due to information oveload with video and verbal debriefing. They only studied anesthesia non technical skills. No clinical correlation.
LOE 1 Good, supportive

29. van Schaik, S. M., I. Von Kohorn, et al. (2008). "Pediatric Resident Confidence in Resuscitation Skills Relates to Mock Code Experience." Clinical Pediatrics **47**(8): 777-783.

COMMENTS: Pediatric resident questionnaire 74% questionnaires returned so is a representative sample. Indirect evidence that debriefing aproved confidence. Mock codes were always followed by debriefing while real codes were not. They tried to correlate mock code and real code experience with confidence, however this was not the purpose of the study and with the average mock codes being 4.85 and real codes being 3.98, difficult to tell if in fact the reason the confidence was better was because of debriefing or mor oppurtunity and time.There was overlap between the residents attending mock and real codes.
LOE 5 Poor, supportive

30. Wayne DB, Butter J, Siddall VJ, Fudala MJ, Linquist LA, Feinglass J, Wade LD, McGaghie WC. (2005). “Simulation-Based Training of Internal Medicine Residents in Advanced Cardiac Life Support Protocols: A Randomized Trial.” Teach Learn Med **17**(3):202-208.

COMMENTS: Investigators conducted a randomized study. Intervention included engagement of the residents with high fidelity simulation of clinical events and there was opportunity for feedback and learning. Debriefing sessions allowed the residents to ask questions, review algorithms and receive feedback. They did not video the residents doing the simulations so there was no true debriefing.
LOE 1 Poor, supportive

31. Wayne DB, Didwania A, Feinglass J, Fudala MJ, Barsuk JH, McGaghie WC. (2008). “Simulation-based education improves quality of care during cardiac arrest team responses at an academic teaching hospital: a case-control study.” Chest **133**(1):56-61. Epub 2007 Jun 15.

COMMENTS: This a second study by the same investigators that used debriefing to describe an opportunity for the residents to ask questions.
LOE 3 poor, supportive