



### Expert Opinion: Dr Marc Berg

*"This Scientific Statement gives the interested reader more of what they need to make positive changes in their programs in resuscitation science and ultimately "move the needle" in effective training and saving lives"*

### The Article :

## "Resuscitation Education Science: Educational Strategies to Improve Outcomes From Cardiac Arrest : A Scientific Statement From the American Heart Association"

[Cheng, A., Nadkarni, V., Mancini, M., Hunt, E., Sinz, E., Merchant, R., Donoghue, A., Duff, J., Eppich, W., Auerbach, M., Bigham, B., Blewer, A., Chan, P. and Bhanji, F. \(2018\) \*Circulation\*, 138\(6\).](#)

#### Case & Summary Author :

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#### Expert Commenter :

- Dr Marc Berg

#### Editors :

- Dr Victoria Brazil
- Jesse Spurr

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Simulcast Journal Club is a monthly/ series that aims to encourage simulation educators to explore and learn from publications on Healthcare Simulation Education.

Each month we publish a case and link a paper with associated questions for discussion.

We moderate and summarise the discussion at the end of the month, including exploring the opinions of experts from the field.

### The Case :

Brad panted as he raced up the last of the hospital stairs and into the hallway. Nitin had gone to help with the arrest 15 minutes earlier but when he'd called for backup his voice had been laced with fear.

As Brad walked into the patients' room he kept quiet and surveyed the lay of the land. With resignation he realised he'd seen this scene too many times in his career. A messy resuscitation, stressed out staff, poor quality chest compressions, noise.

He suppressed the urge to voice frustration. Contain the emotion. They're doing their best.

But that wasn't true, he thought, this wasn't their best. These were smart, capable people who cared about their patients. And they sucked at resuscitation. Annual competencies just couldn't keep ward staff skilled enough at CPR when a child might arrest on them once in a career.

He placed a supportive hand on Nitin's shoulder and smiled grimly.

"What do we need?" he asked.

### Discussion :

This month we're moving journal club from debriefing to look more at curriculum development. In August 2018, Cheng et al published this extensive, open access document providing a detailed look at current evidence about what works in Resuscitation Education.

For our journal clubbers, please share your perspectives on the paper, and if you don't have any specific thoughts :

- How does this paper reflect or diverge from the reality of your resuscitation training?
- Do the principles outlined in this article ring true?
- What barriers exist to implementing these strategies?

### Resuscitation Education Science: Educational Strategies to Improve Outcomes From Cardiac Arrest : A Scientific Statement From the American Heart Association.

Cheng, A., Nadkarni, V., Mancini, M., Hunt, E., Sinz, E., Merchant, R., Donoghue, A., Duff, J., Eppich, W., Auerbach, M., Bigham, B., Blewer, A., Chan, P. and Bhanji, F. (2018). *Circulation*, 138(6).

The AHA Statement is a call to arms on Resus Education. Arguing that we are losing the battle in the campaign to educate the masses on good Resuscitation.



In essence, they argue that **Poor Quality CPR is a Preventable Harm**



So they deep dive into the evidence of what has been shown to work best.

Mastery Learning & Deliberate Practice

Spaced Practice

Contextual Learning

Feedback & Debriefing

Faculty Development

Assessment

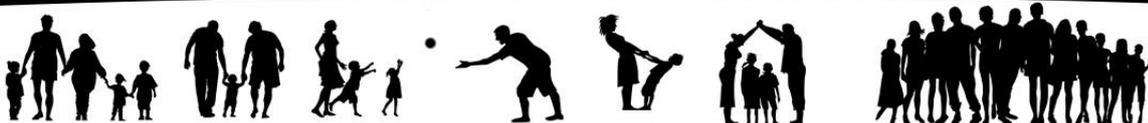
Innovative Strategies

Knowledge Translation & Implementation

Groups of experts separately looked at 8 categories of educational strategies, and made recommendations based on evidence.

Reading it is a great opportunity to take stock and think...

"Are we teaching this the way we always have? Or are we teaching this to stick?"



Because actual lives are at stake...

Expert Opinion : Dr Marc Berg



Dr Berg completed his undergraduate and medical training at the University of Minnesota, Pediatric residency and Chief Resident year at the University of Arizona, fellowship in Pediatric Critical Care Medicine at the University of Utah. He was on the Faculty of the University of Arizona for 16 years serving as Medical Director and Division Director. He joined the faculty at Stanford 1.5 years ago as Clinical Professor of Pediatrics and Medical Director of the Revive Initiative for Pediatric Resuscitation Excellence which is the in situ simulation program for Lucile Packard Children’s Hospital at Stanford.

His research interests have been in education as an American Heart Association volunteer for > 10 years and past Chair of the PALS committee. In resuscitation he has been involved in Pediatric defibrillation research. "On the side" he serves as Chief Medical Advisor for Area9 Group, a leading developer of Adaptive Learning software. ([area9lyceum.com](http://area9lyceum.com))

I was delighted this month to be asked to provide some thoughts on the recent AHA Scientific Statement on educational strategies to improve outcomes from cardiac arrest. As is uniformly the case with AHA Scientific Statements, they are exhaustive, authoritative and timely. This one is no exception. In addition to the review of, and foundation in, science, it is incredibly practical in its scope and approach to this broad and complex topic. It can and should be used not only as a complete review of the topic but as a tool kit for improving the issues addressed. Too often we find review statements in medicine which present the foundation and latest information on a given topic but fail to guide the reader in "next steps." This Scientific Statement stands in contrast to this model, giving the interested reader more of what they need to make positive changes in their programs in resuscitation science and ultimately "move the needle" in effective training and saving lives.

Herein are some of my thoughts from this scientific statement to highlight:

"Practice Makes Perfect" and Mastery are important concepts in any education, especially so in resuscitation training. Not all learners have the same skill and ability entering an exercise, not all have the same needed or desired educational endpoints. However, to achieve whatever endpoint is desired, repeated, deliberate and focused effort yields best results. The important concept of rapid-cycle deliberate practice is well-presented and ready for initial implementation by the reader.

Over-learning may sound unnecessary or even something to be avoided, but it should be considered that with knowledge decay (see Ebbinghaus Forgetting Curve) perhaps if we learn to a point a bit past our required level we may retain the essential elements longer. A natural progression of over-learned material may be the development of automaticity or "unconscious competence" (the interested reader may explore the Four Stages of Learning in applied psychology; Broadwell, Burch, Maslow and others.) Automaticity means the learner knows a subject, or psychomotor skill, to such a degree that he or she can perform it well with minimal or no active thought. In Medicine, and in Resuscitation in particular, having perfected several skills to the level of automaticity is a great benefit as it frees your mind to perform additional tasks or consider more complex issues, even during the stress of a resuscitation.

Spaced practice is now well acknowledged and an area with great applicability to the educational community. How often do we need to retrain? What is the ideal interval that allows maintenance of proficiency (or even better Mastery) yet does not over-burden the student or the educational system. Several ideas and references are presented; one worth pondering is the notion that participating in, and debriefing, actual events can itself be a powerful tool for learning new approaches, cementing core concepts and improving performance. Technology enhanced simulators and other tools

can be used to create adaptive learning programs for individual students. This can include identifying optimal learning approaches or techniques and training intervals.

The topics of contextual learning, including manikin fidelity, team-training, stress and cognitive load, in-situ simulation and others are presented briefly.

Feedback and debriefing are reviewed in more detail, as deserved. Most people involved in resuscitation education recognize the critical role of the debriefing in learning, arguably the most important part of simulation-based learning. Although there are several excellent sources available to learn about every aspect of debriefing, this section of the scientific statement takes the reader through the foundational principles quickly and efficiently. The importance of "prebriefing" as setting the stage for the learners to maximize their experience in the simulation is presented. This is often rushed or overlooked entirely. This activity not only provides the learners with a shared model and practical concerns such as manikin and equipment orientation, it can help free the participants to fully engage by reminding them of the goals of the exercise and the confidential nature of simulation. As an aside, "prebriefing" is a term that has been introduced into the simulation world quite widely. In fact, a briefing is actually what many are calling "prebriefing", where a briefing is defined as "a meeting for giving information or instructions" from Google Dictionary.

A deeper dive is taken into assessment and faculty development which I will leave to the reader. This is certainly important information for those who are leaders in training centers or departments.

I regret that I cannot do justice to such an extensive statement with my commentary. At 42 pages, it is ambitious in its scope but address several areas of interest to many. I hope my comments may inspire others to greater teaching, learning and patient care.

## Summary of this Month's Journal Club Discussion :

### Blog Contributors :

- Eve Purdy, Christina Choung, Farrukh Jafri, Susan Eller, Ben Symon, Shannon McNamara, Jesse Spurr
- Vic Brazil, Nemat Alsaba, Adam Cheng, Sarah McNamee, Matt Nettle, Kara Allen
- Komal Bajaj, Kylie Moon, Sara Chesney

The paper drew a fairly wide range of perspectives but some focused on a few main themes.

### Educators highly embraced a move from 'checkbox' acquisition to mastery based learning

Early on in this month's conversation, it appeared clear that many journal clubbers were unimpressed by institutional emphasis of annual CPR competency training. Aware of data that shows relatively poor skills retention, it appeared that the group were onboard with moving towards a mastery based learning model.

It was acknowledged, however, that mandatory competencies are not without some benefits for organisations in particular. Eve Purdy put her anthropologist hat on and argued :

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*"What does mandatory training do? Signals to employees that we think it's important that they know how to do CPR, even if it doesn't give them the skills; Exerts control over employees which is part of a bigger institutional effort to standardize behaviour and maintain power; Makes big bodies money and more powerful/recognized; Allows people who teach the courses... to engage in some of the best practices."*

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### The paper's depth was respected but considered a barrier to entry for some readers.

Susan Eller mentioned "experiencing a little cognitive overload", and she wasn't alone. Most journal clubbers mentioned the length of the paper as being daunting. This was offset somewhat by the release of Infographics, particularly from [Canadiem.org](http://Canadiem.org) ([available here](#)) which provide an entry point to anchor readers.

While the overload was real for many, Jesse Spurr also argued that :

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*"I think this is one of those 'gateway drug' type articles that will hopefully serve as a conduit to some great educational theory and learning science for a whole lot of clinical educational enthusiasts and hopefully even some hospital administrators"*

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### Money & Institutional Unlearning were seen as significant barriers regarding implementation of these innovative teaching techniques

It was frequently mentioned that changing the way we teach resuscitation is very, very hard. Financial constraints were a consistent feature for concern. As Farrukh Jafri argued : "It really comes down to monetary value at the executive level... I think the bringing up of finances is so important and relevant to the survival of such programs.". Christina Choung acknowledged as well the complexities of working in a system with finite resources. She asked "Where does resuscitation sit in the hierarchy of ever-competing priorities in any healthcare department? Surely in the ED and for those on the code team, it's a no-brainer. But how about for those on general wards? In clinics? In residential care?".

A number of posts also acknowledged, as Sarah McNamee did, that "Unlearning is hard. Changing how we learn and teach is also hard.". Shannon McNamara took the frame that "Overall, I think institutions aren't opposed to quality care, I think the boat is just very, very large and difficult to steer in a new direction.".

Finally Adam Cheng swung by, and mentioned that he hopes this paper is a 'call to arms' for the resuscitation education community. He also mentioned that his crew will be doing a series of 'town halls' in the coming months to brainstorm how to implement these strategies. Exciting times!

## Acknowledgements :

Thank you to Dr Berg for his expert commentary this month.

Thank you to all commenters this month for sharing your thoughts and allowing us to learn from you.

Simulcast would like to thank the creators of the ALiEM MEDiC series for the inspiration for the journal club's blog format and their ongoing support and contributions to the project.

## References :

1. Cheng, A., Nadkarni, V., Mancini, M., Hunt, E., Sinz, E., Merchant, R., Donoghue, A., Duff, J., Eppich, W., Auerbach, M., Bigham, B., Blewer, A., Chan, P. and Bhanji, F. (2018). Resuscitation Education Science: Educational Strategies to Improve Outcomes From Cardiac Arrest: A Scientific Statement From the American Heart Association. *Circulation*, 138(6).
2. CanadiEM. (2018). *Highlights from the 2018 AHA Scientific Statement on Resuscitation Education - CanadiEM*. [online] Available at: <https://canadiem.org/aha-scientific-statement-on-resuscitation-education/> [Accessed 23 Oct. 2018].