

EDITORIAL

Building a Culture of Champions: The Importance of Leadership in Resuscitation

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An effective response to in-hospital cardiac arrest (IHCA) is necessary to optimize outcomes. The American Heart Association (AHA) first conceptualized and published a cardiac arrest Chain of Survival in the 1991 Cardiopulmonary Resuscitation and Emergency Cardiovascular Care guidelines, mostly focused on out-of-hospital cardiac arrest response.¹ In 2015, the AHA added a "Systems of Care" section to the guidelines, increasing the emphasis on creating synergistic resuscitation systems that work toward continuous feedback and improvement,² and highlighted differences between specific links in the Chain of Survival that were empirically unique to *in-hospital* versus out-of-hospital systems of care. The 2020 updated adult IHCA Chain of Survival currently includes 6 key components, early recognition and prevention, activation of emergency response, high-quality cardiopulmonary resuscitation, defibrillation, post-cardiac arrest care, and recovery, that illustrate the complex coordination required of a resuscitation effort.³ Several hospitals have demonstrated that a multidimensional cardiopulmonary resuscitation quality improvement bundle paired with intensive debriefing can both improve resuscitation process of care, as well as survival outcomes, while simultaneously identifying opportunities for further improvement.^{4,5} These successful programs were instituted by champions, but (until now) the impact of leadership, and characteristics of champions that lead to successful program implementation and

improved survival outcomes, has not been systematically explored.

See Article by Chan et al.

The AHA'S Get With The Guidelines–Resuscitation (GWTG-R) registry provides robust IHCA data from hundreds of hospitals in the United States. Important insights have been gained from studies of the registry, including the knowledge that survival rates after IHCA vary considerably between hospitals.⁶ Dr Paul Chan and his colleagues have previously published pioneering work that identifies hospital resuscitation practices that likely account for these differences and contribute to our understanding of what defines the most successful resuscitation systems of care. In a national survey of Resuscitation Committee leaders at GWTG-R participating hospitals, practices associated with the best survival to hospital discharge were (1) tracking interruptions in chest compressions, (2) reviewing cardiac arrest cases monthly or quarterly, and (3) ensuring adequate resuscitation training.⁷ Hospital staff focus groups at a subset of these GWTG-R participating hospitals identified several characteristics more likely to be present at "top-performing" hospitals: adequate resuscitation education, better communication, and designated resuscitation teams with clear roles.⁸ In these qualitative interviews, *resuscitation champions*

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were often cited as contributors to the positive attributes of a resuscitation system.

In this issue of the *Journal of the American Heart Association (JAHA)*, the AHA's GWTG-R investigators aimed to validate and expand the knowledge base on best practices for successful resuscitation systems: the study investigated the association between a hospital's survival outcomes and resuscitation "champion" status.⁹ A rigorous previously validated method was used to calculate hospital risk-standardized survival to discharge rates, and hospitals were divided into top, middle, and bottom quintiles. They defined a champion as a dynamic and charismatic individual who is an active leader in implementing programs to improve resuscitation response and quality at his/her hospital. The authors first surveyed Resuscitation Committee directors on hospital practices with a focus on identifying if there was a resuscitation champion present at the hospital and, if so, characterizing him/her into categories based on discipline (physician or nonphysician) and engagement level (very active, somewhat active, or not active); the survey had an excellent 89% response rate. A logistic regression model that adjusted for resuscitation practices with a bivariate association across champion groups was used to evaluate the association between hospital champion characteristics and quintile of risk-standardized survival rate.

The authors found that of the 192 hospitals surveyed, 15.1% had a very active physician champion, 33.3% had a very active nonphysician champion, and, notably, 51.6% had either no resuscitation champion or resuscitation champions that were not "very active." Hospitals with a very active *physician* champion were more likely to report that code team members always communicate well ($P=0.005$), monitor diastolic blood pressures during code events ($P=0.046$), have staff members assigned to perform chest compressions ($P=0.04$), have a code leader use a lanyard or hat ($P=0.002$), and have code debriefings immediately after an event ($P=0.03$). Of note, resuscitation process of care quality metrics reported to GWTG-R, including rates of defibrillation within 2 minutes for a shockable rhythm (74%–75%) and rates of epinephrine administration within 5 minutes (92%–93%), did not differ between champion groups, and thus did not reflect the improved communication and code team behavior differences. Risk-standardized survival to discharge rates varied across champion groups: hospitals with a very active *physician* champion had a $29.5\pm 4.3\%$ median survival rate to discharge compared with $26.7\pm 5.3\%$ and $26.3\pm 5.2\%$ in those hospitals with very active nonphysician champions and those without very active champions. Even after accounting for GWTG-R hospital resuscitation practice differences, those hospitals with a very active physician champion remained nearly 4 times more likely to be in the top quintile of survival to hospital discharge compared with those without a

very active champion (odds ratio [OR], 3.90; $P=0.01$), whereas those with a very active *nonphysician* champion were not statistically more likely to be in the top quintile for survival to discharge than those without a very active *physician* champion (OR, 1.28; $P=0.51$).

The authors should be commended for their contribution to our knowledge on the components of successful resuscitation systems of care, and specifically beginning to recognize the impact of "champions" and "sponsors." In particular, their combination of qualitative survey data on hospital resuscitation practices with the robust quantitative GWTG-R risk-adjusted survival data provides additional perspective relevant to the AHA's emphasis on optimizing systems of care and the IHCA Chain of Survival. Their findings that (1) hospitals with very active physician resuscitation champions have a higher median rate of risk-adjusted survival to hospital discharge than those with no very active resuscitation champion and that (2) there is a lack of very active resuscitation champions (neither physician nor nonphysician) in >50% of the surveyed hospitals suggest an opportunity for improvement in national IHCA care and outcomes.

Surprisingly, the authors note that only those hospitals with a very active *physician* resuscitation champion have a statistically significant higher chance of being in the top quintile of hospital survival. Particularly with the proven benefit of *nonphysician* (nurse) champions in other areas of health care,¹⁰ one would not expect that the benefits of very active resuscitation champions would be unique to physicians. Is it possible that there is unintended classification bias? Note that the study authors categorized all hospitals that had *both* a physician and a nonphysician resuscitation champion in the physician champion group, which precluded a direct comparison of hospitals with only physician resuscitation champions with those with only nonphysician resuscitation champions. In fact, one would expect that those hospitals with multiple and multidisciplinary (physician *and* nonphysician) resuscitation champions would likely have the most champion benefit effect. Unfortunately, the investigators are not able to tease out the contribution of the physician/nonphysician champion dyad in this study. This distinction, and the importance of the role of nonphysician champions, warrants additional future characterization and study.

In addition, the association between resuscitation champion status and risk-adjusted survival outcomes is not explained by improved measured resuscitation process of care practices that were captured by GWTG-R in this study. There is need for further work to explain the association and possible benefit conferred by engaged resuscitation champions. This idea of a resuscitation champion also fits within the larger discussion of champions in health care. In an integrative review, Miech et al point out that the number of articles citing a "champion" construct has increased considerably in recent years.¹¹

But what defines a champion or distinguishes this role from “coaches,” “mentors,” or “sponsors”? Although we lack a consensus and standardized definition of a health-care champion, the authors’ description and those in previously published studies include attributes such as the ability to motivate a team around a common goal, having the drive and influence to advocate effectively on behalf of an issue, providing visible enthusiasm for an effort, and having personal investment in the success of a program. Building a successful resuscitation system of care may in fact rely on building a culture around such champions. We should continue to attempt to further characterize engaged and effective champions and their impact in an effort to strengthen the Chain of Survival. The ultimate goal is to convert a team of individual “champions” into a “championship team”!

ARTICLE INFORMATION

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Disclosures

None.

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