Anatomy of a Code Blue: An Audio Narrative of In-Hospital Cardiac Arrest

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Scholarly Report for *Anatomy of a Code Blue*

Scholarly Report submitted in partial fulfillment of the MD Degree at Harvard Medical School

**Date:** 30 September 2016

**Student Name:** Samuel Dennis Slavin, BA

**Scholarly Report Title:** Anatomy of a Code Blue: An Audio Narrative of In-Hospital Cardiac Arrest

**Mentor Name(s) and Affiliations:** Jeffrey Rothschild, MD, MPH, Associate Professor of Medicine, Harvard Medical School and Clinical Device Director, Partners eCare

**Collaborators, with Affiliations:** Viki Merrick, independent radio producer and Associate Director, Atlantic Public Media; Jay Allison, independent radio producer and Director, Atlantic Public Media
Abstract

Anatomy of a Code Blue: An Audio Narrative of In-Hospital Cardiac Arrest

Purpose: When an inpatient suffers a cardiac arrest most hospitals activate a response called a “code blue” or simply a “code.” Popular media often depict codes as quick and highly successful, although there has been a recent trend to emphasize their violence and futility. The reality is more complex. We aimed to produce an audio documentary that captures the subtleties and emotional truths that are missed by these extreme depictions.

Methods: We recorded 28 hours of interviews with nurses, physicians, chaplains, housekeeping staff, patient care technicians, a unit coordinator and a pharmacist, as well as patients’ family members. We wrote and recorded narration to orient medical and non-medical listeners and edited the audio to create a 26-minute radio documentary.

Results/Significance: The final piece, Anatomy of a Code Blue, follows the chronology of a typical code, incorporating multiple voices at each stage. Intended for the general public as well as the medical community, this work may inform approaches to end-of-life care, while also fostering reflection on the relationships among patients, families and hospital staff at these critical moments. It may have the potential to be used in humanities curricula for medical students, residents and other hospital staff, as well as patient and family education.

Link: http://www.transom.org/2015/anatomy-of-a-code-blue
**Description of Student’s Contribution as First Author:**

As first author/producer, my contributions included primary responsibility for: project conception, background research, application for grant funding, establishing collaboration with radio producers, recording all the interviews, writing and recording narration, audio editing/mixing and producing text and images for the documentary’s webpage. Throughout this process I received support from my mentor, Jeffrey Rothschild, and instruction in audio production from independent radio producers, Viki Merrick and Jay Allison.

My vision for *Anatomy of a Code Blue* developed during the first year of medical school. I was struck by the diverse range of staff that come together to make a hospital function and wanted to convey this diversity of staff and the relationships among them by recording their experiences of a code blue, one of the most emotionally powerful moments in the life of the hospital. As I began to explore in-hospital resuscitation in greater depth through their eyes, I realized that producing an audio documentary based on these intimate experiences might offer unique insight into end-of-life decisions for both the medical community and the general public.

My background research focused on understanding how previous depictions of cardiac arrest in mainstream media have influenced the public’s perceptions of resuscitation in ways that often diverge from the medical community's perspective. In particular, I found that over the past fifty years depictions have tended toward a simple, heroic and optimistic view of resuscitation, while some more recent depictions have emphasized themes of brutality and futility, making the case that we attempt CPR too often when it is not indicated (additional detail and references in the next section of this report). Within this historical context, I decided to avoid these extremes and aimed instead to create an intimate portrait of resuscitation with the potential to promote a more nuanced discussion among physicians, patients and families. This concept formed the basis of a successful application for funding from the Neil Samuel Ghiso Foundation for Compassionate Care.

Although I had experience recording interviews for qualitative research, I needed instruction around audio production for radio. I contacted Transom, a forum for new voices in public radio, and developed a mentoring relationship with several independent audio producers. They provided equipment and instruction in audio production, while allowing me to take the lead on all of the recording and editing.

After detailed discussions with the Media Relations Office and the Code Blue Committee at the Beth Israel Deaconess Medical Center, I began recording interviews with patients, families and hospital
staff. In total, I recorded twenty-eight hours of interviews that we edited to produce a twenty-six-minute audio piece. I was responsible for all of the editing and received feedback on each draft from Viki Merrick, my primary collaborator at Transom, as well as my HMS mentor, Jeffrey Rothschild. I also wrote and recorded the narration.

The final piece was featured on the Transom podcast and the Peabody-award winning website Transom.org, as well as broadcast on several NPR stations in United States and Australia. For the Transom website, I wrote an accompanying commentary on the process of making this piece and reflections about its potential relevance to conversations around end-of-life decisions. The final piece and commentary can be found here: http://www.transom.org/2015/anatomy-of-a-code-blue

**Scholarly Context of Anatomy of a Code Blue:**

**Introduction:** Anatomy of a Code Blue is an audio narrative of in-hospital cardiopulmonary resuscitation that integrates the voices of the full range of hospital staff and patients’ families. Resuscitation events, often referred to simply as “codes,” are among the most complex, emotionally charged and widely misunderstood in the world of the hospital. Yet hospital staff rarely communicate with one another about codes, sometimes to the detriment of patient care,1,2 and even more rarely have the opportunity to share their unique and diverse perspectives with the general public.3,4 By weaving these intimate experiences into a single audio narrative, Anatomy of a Code Blue, offers the medical community and the general public a personal and nuanced story of codes with the potential to further the national conversation about end-of-life care.

**Background:** On mainstream television programs 75% of in-hospital resuscitation attempts are successful and 65% of patients who go into cardiac arrest are shown leaving the hospital in good health.5 In reality, about 18% of adults survive to discharge,6 of whom 27% experience severe cerebral disability, persistent coma or brain death.7 It has been suggested that this misrepresentation has a profound effect on the way patients make end-of-life decisions. For instance, it may be one of the reasons why only 25% of the general public says they would refuse CPR if they went into cardiac arrest while already in a coma, compared to 90% of doctors.8

To address this divide between healthcare providers and communities, very promising work is already underway using multimedia approaches to inform end-of-life discussions with individual
patients and families. Recently, Volandes et al. have shown that video can be a powerful educational tool in this setting. Their videos on CPR include a single narrator, video footage of a simulated code and a live patient on a ventilator. While Volandes et al. have demonstrated the importance of multimedia approaches to educate patients and families about the realities of in-hospital resuscitation, their work is focused on the presentation of objective facts, whereas Anatomy of a Code Blue integrates multiple, subjective experiences of codes. While Volandes intentionally eschews the emotional aspects of codes, this project invites discussion of these personal and emotional elements. Partly for this reason, we chose the medium of audio so that listeners are permitted to imagine the scene of the code as felt and experienced by our interview subjects, as opposed to the single, authoritative perspective of the camera. Audio also permitted us to record a greater diversity of subjects, as many subjects expressed that they would not have participated in video recording.

The most notable use of audio to explore the issue of resuscitation is an episode of the highly acclaimed NPR program, Radiolab, entitled “The Bitter End.” The show’s hosts interview physicians about their personal experiences of in-hospital resuscitation and describe the research demonstrating that physicians’ choices about end-of-life care are significantly different from the general population. Radiolab has shown that audio can convey the realities of resuscitation vividly. Unlike Anatomy of a Code Blue, however, they only interview physicians and their focus is examining choices of about end-of-life care as opposed to providing an experiential narrative of resuscitation itself.

Relevance: Anatomy of a Code Blue has the potential to improve quality of care by promoting more open conversations about resuscitation—both among the general public and within the medical community. For instance, the official guidelines of the American Heart Association recommend that code teams debrief after all codes to discuss the technical and emotional aspects of the event, yet this rarely happens in practice—only 12% of the time according to one study. Within a single professional group, among doctors or among nurses, there is very limited discussion. Across the divisions of the hospital hierarchy conversation is even more rare. By weaving together the experiences of a wide range of hospital staff Anatomy of a Code Blue facilitates a virtual conversation, highlighting resonant and discordant perspectives in a way that may then stimulate real conversation within institutions.

In addition, this audio piece has particular relevance to the controversial issue of offering patients’ families the opportunity to be in the room during a resuscitation attempt. Despite evidence
suggesting that relatives are actually less traumatized when offered the choice to witness a code, the majority of physicians continue to feel uneasy about family presence. Qualitative studies have shown that this unease may be rooted in a need to protect some of physicians’ own important coping mechanisms—forms of emotional distancing that are complicated by the presence of distraught relatives. By creating a forum for hospital staff and families to speak openly about their experience of codes, this audio piece has the potential to advance the discussion of complex sentiments on both sides of the issue.

**Conclusion:** *Anatomy of a Code Blue* appears to be a novel contribution to the field, as an extensive literature review found no previous narrative representation of a code that integrates the experiences of as wide a range of hospital staff and family members. While there is a growing literature on providers’ and family members’ experiences of end-of-life care, there are significant differences between *Anatomy of a Code Blue* and what has been done to date. First-person memoirs and essays tend to be limited to the experience of an individual, whereas survey-based research focuses on quantifying specific emotional responses, such as stress or depression, rather than conveying an open range of experiences in participants’ own voices. Moreover, none of this narrative work or qualitative research looks at experiences of hospital staff beyond nurses and physicians.

Finally, while *Anatomy of Code Blue* is not itself a traditional work of medical research, there is a need for further research to elucidate the effect of its narrative form on listeners from the general public and the medical community. Subsequent studies would be required to assess its impact on patients’ and families’ decisions about code status and end-of-life care. Additional investigation might also assess how exposure to this form of audio narrative affects medical trainees and hospital staff with regard to their own psychological experience of resuscitation and their approach to interdisciplinary collaboration in the treatment of critically ill patients.

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