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Attitudes and practices regarding resuscitation in emergency departments in Trinidad and Tobago

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ABSTRACT

Background Ethical issues with regard to resuscitation are increasingly important. Understanding how emergency physicians deal with these problems is essential for the development of policies for resuscitative care.

Objectives To identify the knowledge, opinions and practices of emergency physicians employed full time in public hospitals in Trinidad and Tobago, with respect to cardiopulmonary resuscitation. To compare the differences in responses between physicians in training and those who were not. In addition, to compare these responses with those expressed in a similar study in the USA in 2007.

Methods All emergency physicians (120) who fulfilled the eligibility criteria for the study were asked to record anonymous responses to survey questions about ethical issues regarding resuscitation.

Results Of the 98 respondents, most (79.6%) had been practising emergency medicine for ≤5 years and about 38% had had some training in emergency medicine. Most respondents agreed that survival rates for cardiopulmonary resuscitation (CPR) were poor. However, 41.2% of respondents had performed CPR >10 times in the past 3 years despite expected futility. More participants in the US study than in the local study thought that the existence of an advance directive was important in making decisions about CPR and that legal concerns should not, but do, affect CPR decisions in practice.

Conclusions Local emergency physicians are as affected by legal and ethical CPR issues as are US emergency physicians. Education programmes and policies that deal with these concerns would better assist the emergency physician in dealing with them.

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INTRODUCTION

Different techniques for the resuscitation of the obtunded patient have been practised for centuries. Techniques used today in cardiopulmonary resuscitation (CPR) were first developed in the 1800s; the development of closed chest compression, positive pressure ventilation and external defibrillation occurred in the 1950s. However, the modern concept of CPR as an integrated series of interventions aimed at supporting cardiopulmonary function in the patient in cardiac arrest was first described by Safar in 1961.[1 2] Although the 'chain of survival' as described by the American Heart Association has undoubtedly improved survival for patients who have an out-of-hospital cardiac arrest, overall survival remains between 1% and 25%.[3] In Trinidad and Tobago, emergency physicians with different levels of training and varying availability of resources, can find themselves at the forefront of making critical decisions about resuscitation and are often responsible for management of end-of life concerns.

In addition to considering the likelihood of survival, ethical and legal issues must also be considered when making decisions about resuscitation. Both the American College of Emergency Physicians and the General Medical Council of the UK recognise the need for physicians to respect a patient's wishes and the desire of any competent patient to refuse CPR (so-called 'advanced directives').[4–6] In Trinidad and Tobago, there is no legislation dealing with the use of an advance directive, though these documents are being come across more often by emergency physicians. It thus becomes the responsibility of the emergency physician to recognise and respond appropriately to such documents.

Emergency medicine (EM) within the Caribbean is a relatively new specialty; the first training programme started in Barbados in 1990 and full postgraduate training in EM (the DM in EM offered at the University of the West Indies) started in Trinidad and Tobago in 2005. At present, physicians staffing the emergency departments (EDs) across the country comprise a mixture of physicians in formal training programmes and those who are not. The attitudes of these two groups may be different, but there is no empirical evidence to demonstrate any such postulated differences.

The attitudes of emergency physicians towards these problems of CPR, and towards other ethical considerations in making decisions about resuscitation, have been described in a study conducted by Marco *et al* in the USA in 1995 and then repeated in 2007.[7 8] However, no such data are available for Trinidad and Tobago.

The primary objective of this study was to establish the opinions and practices of emergency physicians in Trinidad and Tobago regarding cardiopulmonary resuscitation, examining the following:

- factors which influence the decision to start, continue and stop CPR;
- knowledge about CPR outcome statistics;
- legal concerns surrounding CPR, including the use of advance directives.

The secondary objectives of this study were as follows:

- To compare the results of this study with those obtained in a similar study done in the USA in 2007 and to determine if there were any significant differences between emergency physicians practising in a region of the developed world (USA) and in the developing world (Trinidad and Tobago).

- To compare the responses of emergency physicians in a formal training programme in Trinidad with those who were not enrolled in any formal EM training progamme.

METHODS

Study design

This was a cross-sectional survey that investigated the opinions and practices of emergency physicians about the ethical issues of CPR. The study was conducted over a 2-month period (April–May 2010).

Study participants were eligible for enrolment if they were physicians working full time in a public ED in Trinidad and Tobago, with at least 1 year's experience in EM and full registration with the Medical Board of Trinidad and Tobago. Physicians were excluded if they did not meet eligibility criteria, or did not give consent to answering the survey questions.

Survey design and administration

Demographic and professional data were collected from all participants using a separate questionnaire (see online supplementary appendix 1). The main questionnaire used was that used in 1995 and 2007 by Marco *et al*. [7 8] It contained questions on the general characteristics of the participants, physicians' knowledge of CPR survival rates, factors which influence the decision to start, continue or terminate CPR, practice regarding futile resuscitations and the impact of legal issues (see online supplementary appendix 2). Responses were measured using Likert scales, percentages and nominal measurements. Both questionnaires were piloted for ease of understanding, consistency and local relevance. The first 20 respondents were informally interviewed by the primary researcher to ascertain the acceptability of the questionnaire; these responses were eventually included in the overall study, as no changes were made to the tool.

Survey questionnaires were distributed to all public EDs in Trinidad and Tobago and written consent was obtained from all participants. The statement 'The following questions are part of a research survey about ethical issues regarding cardiopulmonary resuscitation', introduced the questions on the survey sheets. At this time, the researcher confirmed whether the physicians fulfilled the inclusion criteria for the study. The exact number of physicians working in the EDs in Trinidad and Tobago was not known, but was estimated to be 120 after consultation with heads of department and interrogation of the most recent departmental duty rosters. All questionnaires were filled out anonymously and both completed and incompletely filled out forms were included in the final results; all returned questionnaires were >90% completed. The questionnaires were kept securely and collected by the primary researcher within 2–4 days of the initial distribution. Questionnaires were not handed over directly from respondents to the primary investigator.

Data analysis

The data obtained were analysed using IBM SPSS software, V.12.0. 95% CIs were calculated for the responses obtained in this study using a large-sample approximation formula. Only the calculated 95% CIs which did not contain zero were considered to be statistically significant. A comparison was also made between the responses obtained in this study and those obtained in a similar study in the USA, completed in 2007; 95% CIs were calculated for the intergroup differences to identify any statistical significance.

Differences between responses from those participants trained/training in EM and those not trained in EM were also described.

RESULTS

One hundred and twenty physicians were eligible for inclusion in the study. Of these, 109 were given the questionnaires, and 98 completed and returned them. All returned questionnaires were >90% completed and were thus included in the study. This reflected a response rate of about 82%. Most responses (71.4%) were obtained from doctors working in the larger EDs attached to the country's main public hospitals, while 28.6% were from doctors working in peripheral stand-alone departments. Most of the participants (79.6%) had been working in EM for ≤5 years (minimum 1 year) and most (65.3%) had not enrolled in any specialised training programme. Of the 98 participants, 29 had had some EM training (38%).

Factors most cited by the participants as being 'very important' or 'important' in influencing the decision to attempt resuscitation and the length of resuscitative efforts are listed in figure 1. The top three factors cited as 'very important' or 'important' in their impact on the decision to start and/or prolong CPR were identical between those trained or training in EM and those who had not trained in EM.

Table 1 indicates physicians' recent practice regarding 'expected futility'. Resuscitation was attempted on more than 10 occasions in the past 3 years, despite expected futility, by 41.2% of respondents. This was similar whether or not the candidate was EM trained (44% of respondents in training/completed EM training vs 40% of those not EM trained). Many respondents (65.6) cited a fear of litigation or criticism as the reason behind the decision to resuscitate, rather than an expected beneficial outcome and this was more marked in those participants without EM training (72%) than in those with EM training (48%). However, most participants felt comfortable (at least 'sometimes') in using professional judgement regarding futility to withhold CPR (74%). This was higher in the group who had been trained in EM (85%) than in those respondents who had had no EM training (70%). In the past 3 years, CPR was performed on patients with a medical condition, for which the physician would not have wanted to be resuscitated, by 85.4% of the respondents. Fewer respondents had recently performed CPR on patients who they later discovered would not have wanted resuscitation (40.2% of participants). A total of

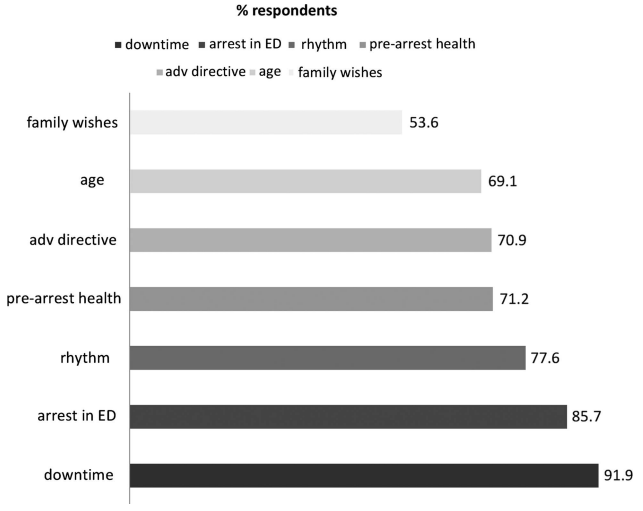

Figure 1 Factors influencing decisions to start or continue cardiopulmonary resuscitation (listed as very important or important) in emergency physicians in Trinidad and Tobago. Adv directive, advanced directive; ED, emergency department.

Table 1 Comparison of responses in the 2007 US study with those in the 2010 Trinidad and Tobago (T&T) study

Responses	2007 USA study n, % respondents	2010 study T&T n, % respondents (95% CI)	% Difference (95% CI)
Response rates	928/4991 18.6% response rate	98/120 82% response rate	
Demographics			
In EM practice <10 years	380, 41%	89, 90.8%	
In EM practice for 10–20 years	306, 33%	5, 5.1%	
In EM practice >20 years	241, 26%	4, 4.1%	
EM training programme	835, 90%	27, 27.6%	
Knowledge of outcome of CPR			
<10% Survival to hospital admission	491, 53%	37, 37.8% (28.2 to 47.4)	−15.2 (−25 to −5)
<10% Survival to hospital discharge	742, 80%	33, 33.7% (24.3 to 43.1)	−46 (−56 to −36)
Regarding expected futility			
In past 3 years, >10 CPR attempts despite expected futility	528, 57%	40, 41.2% * (31.4 to 50.1)	−15.8 (−26 to 5)†
Fear of litigation or criticism influencing CPR decisions	547, 59%	63, 65.6%‡ (56.1 to 75)	6 (−3 to 16.5)†
Advance directives			
Always uphold legal advance directive	798, 86%	50, 51.5%* (41.7 to 61.4)	−34.4 (−44 to −24)
Always uphold unofficial document	64, 7%	9, 9.2% (3.4 to 14)	2.2 (−4 to 8)†
Always uphold verbal report of directive	111, 12%	6, 6.1% (1.3 to 10.8)	−5.9 (−11 to −0.7)
Impact of legal concerns			
Indicate that legal concerns *should not* influence CPR decisions	751, 81%	54, 55.7%* (45.8 to 65.5)	−25.3 (−35 to −15)
Indicate that legal concerns *do* influence CPR decisions	853, 92%	63, 64.9%* (55.4 to 74.3)	−27.1 (−36 to −17)

*Not answered by one respondent; †not significant; ‡not answered by two respondents.
CPR, cardiopulmonary resuscitation; EM, emergency medicine.

37.8% of respondents declared patients dead on arrival in <10% of cases of cardiac arrest. A larger number of EM trained physicians were likely not to declare a patient dead on arrival (46%) than those not trained in EM (35%).

Figure 2 indicates the number of respondents who were willing to uphold a legal advanced directive as opposed to an unofficial document or a verbal request. The percentage of physicians who would always uphold a legal advance directive document was greater in the group of respondents who had EM training (51%) than in those without any EM training (27%).

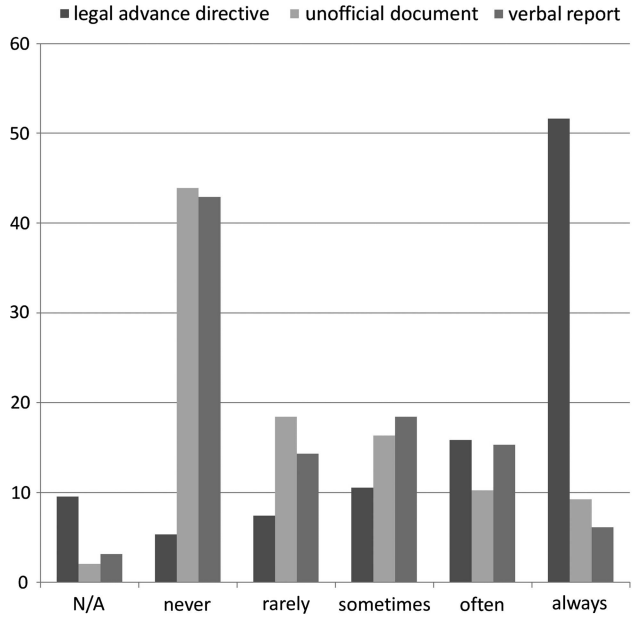

Figure 2 Percentage of emergency physicians in Trinidad and Tobago who would uphold the instructions in a legal advance directive, unofficial document and verbal report of advance directive.

Table 1 indicates the number of respondents who felt that legal concerns should not influence decisions to discontinue CPR (55.7%) versus the number who admitted that these concerns did influence their decisions (64.9%).

Comparisons were made between the responses in this study and those in Marco's study of emergency physicians in the USA in 2007 (table 1), indicating statistically significant differences in responses between the studies. More respondents in the US study believed that survival rates for CPR to hospital admission and discharge were poor. Additionally, more indicated that they would always uphold a legal or verbal report of an advance directive. Also, compared with the Trinidad and Tobago study, more of the US respondents agreed that legal concerns should not influence CPR decisions, but that they do have an influence under current conditions. Other differences found between responses in the two studies were not statistically significant.

DISCUSSION

The specialty of EM is relatively new in Trinidad and Tobago. Formal training in EM started in 2005 and most doctors working in EDs around the island are relatively inexperienced with no specialist training and often with no long-term interest in the specialty. This contrasts starkly with emergency physicians in North America, who were more likely to be trained and to have more years of experience in the specialty. In light of this, the authors felt that an investigation of the attitudes and practices of physicians in the EDs of Trinidad and Tobago regarding resuscitation would be of great importance in developing local policies governing this area of practice.

Emergency physicians in Trinidad generally agreed that the outcome from CPR was poor. No data of outcome following CPR in Trinidad and Tobago are available, but this perception is in agreement with international figures.[3]

The three factors which most significantly influenced resuscitation decisions for emergency room physicians in Trinidad and

Tobago (downtime, witnessed arrest in the ED and presenting rhythm) were similar to those identified by their American counterparts and also consistent with published data.[9–11] However, whereas the presence of an 'advanced directive' was seen as a major factor influencing the decision to start or continue CPR in the USA, this was not the case in Trinidad and Tobago, probably because there is no legislation governing advanced directives there and the use of these documents is still relatively uncommon.

The idea of futility in EM is a difficult concept in the ED. Patients for whom resuscitation is likely to be futile should not have their lives inappropriately prolonged by CPR. However, the full history of the patient is often initially not known to the emergency physician, making it necessary to start CPR in many such instances. As shown in the survey, emergency room doctors in both the developed and the developing world are often faced with this dilemma and will sometimes resuscitate patients despite an expected poor outcome. In our study, nearly half (41.2%) of respondents had performed CPR within the past 3 years on more than 10 patients who were not likely to benefit medically from the resuscitation effort. This figure was comparable to that of the US study by Marco *et al*, [7 8] in which 57% of respondents had similar recent experiences.

Fear of litigation or criticism, despite medical futility, influenced the decision to resuscitate patients in more than two-thirds of the respondents in this study, a slightly greater proportion than in Marco's study (65.6% vs 59%). This result was obtained even though most of our emergency room physicians indicated that they were comfortable in relying on professional judgement to withhold CPR from patients when the effort would be futile.

In addition, more than half of the respondents in this study agreed that legal concerns should not affect resuscitation practice; although almost two-thirds of the respondents believed that in fact they did. The percentage of respondents from Marco's study who considered that legal concerns should not affect resuscitation decisions but nevertheless found that it did have an effect was significantly greater than in Trinidad. Both results suggest that there needs to be more medicolegal support for those who are required to make decisions about end-of-life care. The result also suggests that the fear of litigation may be somewhat less in Trinidad, either because the society is less litigious, or because the Trinidadian physicians are less aware of medicolegal issues.

The differences between the group of respondents who were trained or were being trained in EM and those who were not trained in EM, also showed some interesting trends. The physicians who had had some EM training performed more resuscitations, were more likely to always respect a legal advance directive, were more comfortable using professional judgement to withhold CPR in cases of expected futility and were less influenced by fear of litigation or criticism than in the group of physicians with no training in EM. Although the differences between these two groups did not achieve statistical significance, they do suggest that training in EM allows the physician to make more informed decisions about critical issues that arise in the emergency room regarding resuscitation and supports the idea that any EM training programme should include modules that specifically deal with the concerns of physicians about ethical and medicolegal issues.

Limitations

The size of the sample for the study was limited by the relatively small number of emergency room doctors who were eligible for the study. Randomisation in such a small sample would have been inappropriate, but an attempt was made to sample all eligible doctors in all participating departments, so that most doctors could have been included. Although the number of participants finally sampled (98) is small, this represents a response rate of about 82% of all eligible physicians. The high response rate suggests that a broad cross-section of the study population was sampled, thus limiting the effects of selection bias. As with all surveys of this nature, the responses offered by respondents might have differed from their practice. However, the results of this study do reflect some of the attitudes towards CPR and resuscitation practices in EDs across Trinidad and Tobago.

The small sample numbers also accounted for the lack of statistical significance obtained when comparing the group of respondents who had some training in EM with those who had no training in EM. However, the comparison of these groups was important for the assessment of the influence of specialist training in the country and did permit some interesting observations of differences between trained and untrained emergency physicians.

Finally, this study did not collect demographic data on respondents, such as ethnicity, religion, age, gender or nationality. It is likely that these factors might have influenced their responses. However, earlier research from Trinidad suggested that factors such as ethnicity and religion did not significantly influence attitudes towards resuscitation.[12] In addition, given the small sample size, it is likely that further subdivision would not allow for statistically significant comparisons. We plan to repeat this study, taking into account demographic factors, but sampling a larger population, including all emergency physicians in the Commonwealth Caribbean.

CONCLUSION

Views of emergency physicians in Trinidad and Tobago about CPR are broadly similar to those of American emergency physicians. Although emergency physicians from both countries recognised that the outcome of CPR is limited, many admitted that legal concerns have affected their decisions to start and to stop CPR. Significantly fewer respondents from Trinidad and Tobago were prepared to uphold advanced directives, possibly owing to a lack of knowledge and experience with them. This study suggests that, while emergency physicians require further training and development in the area of advanced directives and end-of-life decisions, the expansion of specialist training is already having a positive effect on this aspect of clinical practice.

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Contributors GB: conceived the research idea, designed the research methodology, collected the data and analysed the results. IS: assisted with the study design, the analysis of data and the discussion and conclusions drawn from the study. JP and PN: advised on the study design, reviewed the manuscript before submission and substantially reviewed the manuscript after receiving the reviewer's comments.

Competing interests None.

Ethics approval Granted by the ethics committee of the Faculty of Medical Sciences, the University of the West Indies, St Augustine Campus.

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