Small animal veterinary clients prefer veterinarians to decide when to terminate resuscitation and to be informed after cardiopulmonary resuscitation efforts

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OBJECTIVE
To identify the preferences of small animal veterinary clients for the timing of communication during CPR and whether these clients prefer the veterinarian or pet owner to decide on the termination of resuscitation.

SAMPLE
Surveys (n = 1,648) were completed between January 20 and February 3, 2023, by clients of the Wilford and Kate Bailey Small Animal Teaching Hospital.

METHODS
This cross-sectional observational study used an anonymous internet-based survey distributed to 28,000 clients of an academic small animal veterinary hospital. The survey included 16 questions asking for the respondents’ demographics, healthcare professional status, questions pertaining to CPR, and preference for timing of communication during CPR, veterinary team members to speak to, and the decision on termination of resuscitation. An optional open comment section was provided.

RESULTS
The response rate was 7.5%, including 2,127 responses, with 1,648 complete responses used for further analysis. Of the respondents, 56% and 63% (when asked using a short and long scenario question, respectively) would prefer to be informed about their pet undergoing CPR after CPR has ended. Most clients (84%) wanted the veterinarian to decide when to stop CPR. In the comments section, clients predominantly emphasized that patient care should always be prioritized over client communication.

CLINICAL RELEVANCE
This study contributes to a better understanding of veterinary clients’ preferences and may help improve client communication and decision-making during CPR. More studies are warranted to reach a wider population before broad recommendations can be made.

Keywords: CPR, client communication, termination of resuscitation, cardiopulmonary resuscitation, DNR

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Hospital discharge after CPR in cats and dogs ranges from 1% to 19% and 5% to 7%, respectively.1–4 Given this poor prognosis and the urgency of cardiopulmonary arrest, client communication during CPR can be uncomfortable for veterinarians, with most reporting feeling emotional stress during CPR and when discussing the code status with owners.5

After CPR has been initiated, veterinarians face the dilemma of contacting the patient’s owner as soon as possible—commonly to inquire whether the owner wants to continue the resuscitative efforts—or waiting until after CPR has ended. If the veterinarian does not inform the owner until after CPR, the veterinarian, by default, will decide when to terminate resuscitation.

To improve the quality of chest compressions and reduce compression fatigue, the ideal number of personnel participating in CPR in people has been determined to be at least 4.6 Due to the veterinary workforce attrition and short-staffing, it may be challenging for veterinary teams to provide enough personnel, often making it impractical for the veterinarian to step away from CPR for client communication.7,8

A recent unpublished survey by the same investigators asking emergency and critical care veterinarians about their usual practice of timing of commu-
nunication during CPR found that 16% (189/1,183; 95% CI, 13.9% to 18.1%) call as soon as CPR has begun, almost 70% (811/1,183; 95% CI, 65.9% to 71.2%) call during CPR, and only < 7% (80/1,183; 95% CI, 5.3% to 8.2%) call clients with an outcome after CPR has been concluded. Calling a client during CPR seems to be the most common practice despite no evidence of pet owner preference.

While the Reassessment Campaign on Veterinary Resuscitation—known as RECOVER—initiative provides a valuable resource for how to medically approach CPR in dogs and cats, there are no guidelines advising veterinarians how and when to communicate this event to clients. Communication on CPR mostly relies on anecdotal experience, hospital policies, or the attending veterinarian’s personal preference. There is a lack of research into veterinary clients’ CPR communication preferences and evidence-based recommendations.

The primary aim of this study was to identify the preferences of small animal veterinary clients for the timing of communication during CPR and whether these clients prefer the veterinarian or pet owner to decide on the termination of resuscitation. The secondary aims included assessing for clients’ preference for which staff member to communicate with during CPR and whether other factors, such as demographics, CPR knowledge, etc, influence the participants’ answer choices. It was hypothesized that respondents would prefer to be called after the CPR of their pet has ended and that they would want the veterinarian to decide when to stop CPR.

Methods

This was a cross-sectional observational study using a convenience sample of participants. An online program (Qualtrics XM; Qualtrics) was used to send an internet-based electronic survey to clients of the academic small animal teaching hospital of the last 5 years (February 2018 through February 2023), which included 28,000 clients. The goal for survey participation was set to 2,000 respondents, and the survey was closed when this goal was achieved. Only clients of dogs and cats were included, and clients were not excluded if their pet was deceased. Participation was voluntary, and no incentives or rewards were provided to respondents. Clients were provided with a cover letter explaining the purpose of the survey, information about the investigators, and an estimated length of duration to answer the survey questions (5 minutes). No follow-up email or reminder was sent to clients. Before participating in the survey, clients were informed that participation was anonymous and no identifying information would be obtained. The survey included 16 questions (Supplementary Material S1) assessing qualitative and quantitative data. The survey included multiple choice, scales, and open-ended questions with text fields. The questions assessed for demographics (age and gender), healthcare profession employment, knowledge of CPR, estimated survival to discharge of CPR in pets, choice of code status for their own pet, previous pet CPR experience, preference of timing of communication during CPR, preferred staff member for communication, preference for decision on termination of resuscitation, and preference for the duration of CPR. At the end of the survey, respondents had the option to leave a comment, but this was not required for completion. Knowledge of CPR was assessed using a scale of 1 (no knowledge of CPR) to 5 (CPR certified). After asking for CPR knowledge, participants were provided with a description of CPR. For estimated CPR survival, a scale of 0% to 100% was given. The preference for timing of communication was assessed by using a short-style multiple-choice question as well as a separate scenario multiple-choice question. Staff member preference for communication was inquired with a scenario multiple-choice question and termination of CPR preference with a short-style multiple-choice question. The usability and technical functionality of the online survey were tested by the investigators before distributing the survey. Survey responses were captured and recorded by use of the same online program as described (Qualtrics XM; Qualtrics). The research was approved by Auburn University’s Institutional Review Board (protocol No. 22-508).

Statistical analysis

Survey responses were filtered for completeness and outlier responses. Only completed surveys with no outlier responses were included in the final data analysis. Commercial software programs were used to complete the analysis (Prism, version 10; GraphPad Software; and Excel 2023; Microsoft Corp). Descriptive analysis was applied to all data. Continuous variables were assessed for normality with the D’Agostino and Pearson test as well as visual Q-Q plot assessment. Parametric or nonparametric data were presented with mean and SD or median and range, respectively. Group comparison was performed using the Mann-Whitney/t test or Kruskal-Wallis/ANOVA as appropriate. The Fisher exact or χ² test was used for categorical data. The P value for significance was set at < .05. The 95% CI for proportions was determined using the Wilson/Brown method. The text responses for the healthcare profession description were grouped into the following categories for analysis: human medicine, veterinary medicine, mental healthcare, pharmacy, laboratory/research setting, client care representatives, administrative work/management, and unable to categorize. Qualitative comments were evaluated by a single author for consistent themes not captured in the quantitative data. A power analysis was not conducted.

Results

A total of 2,127 of 28,000 clients responded to the survey with a response rate of 7.5%. The responses were collected over a time frame of 2 weeks from January 20 through February 3, 2023. After filtering out any incomplete responses or outliers, 1,648 re-
sponses remained for data analysis, yielding a completion rate of 77.5%.

Demographics and background

Of the 1,648 respondents, 1,236 (75%) were female, 409 of 1,648 (25%) were male, and 2 (0.12%) respondents answered “other.” The respondents’ age ranged from 18 to 86 years and was not normally distributed with a median of 54. Males were significantly older than females (median, 61 vs 52 years; \( P < .0001 \)).

Five hundred forty-one (541/1,648 [33%]) respondents were healthcare professionals (HCPs), and 1,107 of 1,648 (67%) were not. Two hundred eighty-five of 541 (52%) were human medicine workers, 107 of 541 (20%) were veterinary medicine workers, 26 of 541 (5%) worked in mental healthcare, 20 of 541 (4%) worked in administration or management, 17 of 541 (3%) worked in pharmacy, 12 of 541 (2%) worked in laboratory or research settings, 5 of 541 (1%) were client service representatives, and 70 of 541 (13%) could not be categorized by the answer given. Veterinary healthcare workers were more commonly female (\( P < .005 \)) and younger (\( P < .0001 \)) compared to all respondents with a median age of 29 years compared to 54 years. Human medicine healthcare workers were also more often female (\( P = .0016 \)) compared to all respondents.

Supplemental CPR questions

The median self-estimated CPR knowledge of all respondents was 4. There was no significant difference between males and females. Healthcare professionals had a significantly higher self-estimated CPR knowledge than non-HCPs (median, 5 vs 3; \( P < .0001 \)). Human medicine HCPs ranked their CPR knowledge higher compared to all other HCP groups (\( P < .0001 \)).

The estimated survival to discharge of pets undergoing CPR was normally distributed, with a mean of 45 ± 26% (95% CI, 43.4% to 45.7%). Healthcare professionals had a significantly lower estimated survival rate compared to non-HCPs, with a mean of 35 ± 26% (95% CI, 35.5% to 39.9%) versus 48 ± 23% (95% CI, 46.5% to 49.3%; \( P < .0001 \)). Veterinary HCPs estimated the CPR survival of pets to be the lowest, with a mean of 23 ± 23%, and their estimate was significantly lower compared to all respondents and to all other HCP groups (\( P < .0001 \)).

Regarding the code status respondents would choose for their own pet, 1,179 of 1,648 (72%; 95% CI, 69.3% to 73.7%) respondents chose CPR and 469 of 1,648 (28%; 95% CI, 26.3% to 30.7%) chose do not resuscitate (DNR). There was no significant difference between male and female respondents. Healthcare professionals significantly more often decided on a DNR status for their pet compared to non-HCPs (\( P < .0026 \)), but CPR was more common in both groups. Respondents who chose a DNR status for their pet were significantly older (\( P < .0001 \)), with a median age of 56 compared to 52 years in the CPR group. Respondents choosing a DNR status for their pet had a significantly lower estimated survival to discharge compared to the ones choosing CPR (\( P < .001 \)), with means of 35 ± 22% (95% CI, 32.8% to 36.8%) and 48 ± 25% (95% CI, 47.0% to 49.9%), respectively.

When asked whether participants had a previous pet undergo CPR, 169 of 1,648 (10%; 95% CI, 8.9% to 11.8%) responded yes and 1,479 of 1,648 (90%; 95% CI, 88.2% to 91.1%) responded no. Of the respondents who had experienced previous pet CPR, 30 of 169 (18%; 95% CI, 12.7% to 24.2%) said their pet survived to discharge, 48 of 169 (28%; 95% CI, 22.1% to 35.6%) stated their pet initially survived but was then euthanized or died, and 91 of 169 (54%; 95% CI, 46.3% to 61.2%) had pets that did not achieve return of spontaneous circulation (ROSC). Respondents who had experienced a pet receiving CPR in the past more commonly chose a DNR code status for their pet compared to respondents who had not had this experience (\( P < .0066 \)). There was no significant difference in how commonly groups with different CPR outcomes chose DNR over CPR.

Timing of communication during CPR: short scenario question

When respondents were asked how soon they would like to be informed that their pet is receiving CPR using a short scenario question (Supplementary Material S1), 594 of 1,648 (36%; 95% CI, 33.8% to 38.4%) chose “as soon as possible,” 135 of 1,648 (8%; 95% CI, 6.9% to 9.6%) chose “during CPR,” and 919 of 1,648 (56%; 95% CI, 53.4% to 58.1%) chose “after the CPR with outcome.” Compared to female respondents, male respondents chose the last answer choice more often (\( P < .001 \)). When comparing HCPs to the rest of the respondents, the answer choices were significantly different, with HCPs more commonly choosing “as soon as possible” or “during the CPR” (\( P < .001 \)) compared to non-HCPs; however, it was still more common in both groups to prefer to be called after CPR. When comparing different categories of HCPs to other healthcare groups and to all respondents, veterinary medicine healthcare workers responded significantly different from all respondents, but not other healthcare groups, with “as soon as possible” and “during CPR” being more common compared to other groups (\( P = .0045 \)). When comparing answer choice groups, there was a significant difference in age, with the group choosing “during CPR” being significantly younger with median ages of 54, 44, and 55 years for the 3 answer choices, respectively (\( P < .001 \)). There was no significant difference between self-assessed CPR knowledge groups (\( P = .0618 \)) or code status groups (\( P = .1396 \)) and answer choices. If respondents had previous pets undergo CPR, they more commonly wanted to be informed as soon as possible or during CPR compared to respondents who had not had a previous pet undergo CPR (\( P = .0036 \)). There was no significant difference between the outcome groups of previous pets undergoing CPR and answer choices.

Regardless of significant differences between groups, the last answer choice remained the most common response in every group except for the veterinary HCP, in which 40% (43/107; 95% CI, 31.4%...
to 49.7%) chose “as soon as possible,” 32% (34/107; 95% CI, 23.7% to 41.1%) chose “during CPR,” and 28% (30/107; 95% CI, 20.4% to 37.2%) chose “after CPR with outcome” (Figure 1).

**Timing of communication during CPR: long scenario question**

When respondents were asked about their preferred timing of communication during CPR using the long scenario question (Supplementary Material S1), 291 of 1,648 (18%; 95% CI, 15.9% to 19.6%) chose to be informed as soon as possible, 318 of 1,648 (19%; 95% CI, 17.5% to 21.3%) chose during CPR, and 1,039 of 1,648 (63%; 95% CI, 60.7% to 65.3%) chose to be informed after CPR. Compared to female respondents, male respondents chose to be informed after CPR significantly more often (P = .0140). Healthcare professionals more commonly chose to be informed as soon as possible or during CPR compared to non-HCPs (P < .001), but overall, both groups predominantly preferred to be informed after CPR. Comparing different categories of HCPs to other HCP groups and all respondents, veterinary medicine healthcare workers responded significantly different from all respondents (P < .0001) and human medicine workers (P = .0140), with “as soon as possible” and “during CPR” being more common for veterinary HCPs. Veterinary HCP was the only group not predominantly choosing to be informed after CPR, with the 3 answer choices yielding 20% (22/107; 95% CI, 13.9% to 29.2%), 45% (46/107; 95% CI, 35.8% to 54.3%), and 35% (37/107; 95% CI, 26.2% to 43.9%), respectively. When comparing answer choice groups, there was a significant difference in age, with respondents wanting to be informed during CPR being significantly younger, with median ages of 55, 51, and 55 years for the 3 answer choices, respectively (P = .0042).

There was also a significant difference between code status groups and answer choices (P < .0001). Respondents choosing the code status DNR more commonly chose to be informed as soon as possible or during CPR, compared to the CPR code status group (P < .001). If respondents had a previous pet undergo CPR, they more commonly wanted to be informed as soon as possible or during CPR compared to respondents who had not had a previous pet undergo CPR (P = .0037). The outcome groups of respondents having experienced previous pet CPR did not have a significant difference in answer choices. Regardless of significant differences between groups, the last answer choice remained the most common response in every group except veterinary HCPs (Figure 2).

**Team member choice for communication during CPR**

Only 85 of 1,648 (5%; 95% CI, 4.2% to 6.3%) respondents preferred to talk to the veterinarian in the event their pet underwent CPR, 487 of 1,648 (30%; 95% CI, 27.4% to 31.8%) wanted to talk to a staff member without medical knowledge, and 1,076 of 1,648 (65%; 95% CI, 62.9% to 67.5%) chose to talk to a staff member without medical knowledge. There was a significant difference in the answer choice between male and female participants, with male participants being more likely to prefer a staff member without medical knowledge. There was a significant difference in the answer choice between HCPs and non-HCPs, with the HCPs having a higher rate of choosing the veterinarian or veterinary technician compared to non-HCPs (P < .0001). The veterinary HCP group’s responses were significantly different from all respondents and all other HCP groups (P < .0001), and they were more likely to want to talk to the veterinarian or veterinary technician than the other groups.
Of the veterinary HCPs, 19% (20/107; 95% CI, 12.4% to 27.1%), 47% (50/107; 95% CI, 37.6% to 56.1%), and 34% (37/107; 95% CI, 37.6% to 56.1%) wanted to talk to the veterinarian, veterinary technician, and staff member without medical knowledge, respectively. Respondents choosing the veterinarian were significantly younger (P = .0001). The DNR code status group chose significantly differently from the CPR code status group (P < .0001), with the CPR group having an even higher proportion of respondents preferring the staff member without medical training. There was no significant difference between groups that experienced previous pet CPR and those that did not.

**Decision to terminate CPR**

Two hundred sixty-six (266/1,648 [16%]; 95% CI, 14.4% to 18.0%) respondents thought the pet owner should make the decision when to stop CPR, and 1,382 of 1,648 (84%; 95% CI, 82.0% to 85.6%) stated the veterinarian should make this decision. There was a significant difference between DNR and CPR code status groups, with the CPR group being more likely to choose the veterinarian (P = .0339). If respondents experienced their own pet undergoing CPR in the past, they answered significantly differently compared to the rest (P < .0001), having a higher proportion of respondents thinking the pet owner should decide when to stop CPR. Comparing outcome groups of respondents who had a previous pet undergoing CPR, respondents whose pet initially achieved ROSC but then died or was euthanized more commonly thought the owner should decide when to terminate CPR when compared to unsuccessful CPR (P = .0269) but not compared to successful CPR (P = .6261). Regardless of significant group differences, overall, every group more commonly answered that the veterinarian should decide when to terminate resuscitation (Figure 3).

![Figure 3](image)

**Comments**

Six hundred seventy-three (673/1,648 [41%]) respondents shared comments at the end of the survey. There were 13 themes identified (Table 1).

<table>
<thead>
<tr>
<th>Sentiment</th>
<th>No. (%) of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prioritize patient care over client communication</td>
<td>202 (12)</td>
</tr>
<tr>
<td>Emphasize that decisions are situation-dependent</td>
<td>175 (11)</td>
</tr>
<tr>
<td>Express confidence and trust in the veterinary healthcare team</td>
<td>140 (8)</td>
</tr>
<tr>
<td>Request more communication and education of clients on CPR</td>
<td>82 (5)</td>
</tr>
<tr>
<td>Would like to be notified as soon as possible</td>
<td>45 (3)</td>
</tr>
<tr>
<td>Concered about adverse effects of CPR and quality of life after CPR</td>
<td>31 (2)</td>
</tr>
<tr>
<td>Want to be present during CPR</td>
<td>22 (1)</td>
</tr>
<tr>
<td>Emphasize emotional strain of decision during CPR on owners</td>
<td>22 (&lt; 1)</td>
</tr>
<tr>
<td>Oppose CPR on pets in general</td>
<td>16 (&lt; 1)</td>
</tr>
<tr>
<td>Wish for joint decision between veterinarian and owner</td>
<td>13 (&lt; 1)</td>
</tr>
<tr>
<td>Think owner should make all decisions</td>
<td>13 (&lt; 1)</td>
</tr>
</tbody>
</table>

Many respondents discussed how patient care should have the highest priority and that it should never be compromised to inform an owner about the passing of their pet. Most stated that communication as early as possible would be preferred; however, they would choose otherwise if early communication could compromise care. Some stated that they would prefer to talk to an HCP, but here they chose the support staff member to not pull any medical personnel away from their pet’s resuscitation efforts. Some respondents stated that if they signed a CPR code status, they would be comfortable with the healthcare team concentrating on the resuscitative efforts and calling after.

Respondents felt that the answer choices were very dependent on the situation, referring to variables like the animal’s health status, age, underlying disease, prognosis, or costs. Most of these comments specifically referred to the question on the pet’s code status (ie, DNR vs CPR). Respondents mentioned that the survey questions were difficult to answer due to these potential nuances.

Many respondents expressed their confidence and trust in their veterinarian and veterinary healthcare team to make the best decision on when to stop CPR. They emphasized that, in their opinion, the veterinarian has the medical training to make the best decision on when to terminate CPR and that they trust the veterinarian would act in their pet’s best interest.

Respondents stated that more client education on CPR is needed. They emphasized that CPR should be thoroughly explained to pet owners on admission and that a code status should be discussed before the potential event of cardiopulmonary arrest. Respondents especially wanted to know the prognosis.
sis, possible complications of CPR after ROSC, and costs involved. Respondents emphasized that they would want to make an informed decision on their pet’s code status and when to terminate CPR and require the veterinarian’s guidance to decide in their pet’s best interest. Some respondents also suggested that even the communication method should be discussed on admittance so that the veterinary team would know when to contact the owner.

Some respondents said they would like to be informed as soon as possible, and several explained that the reason they would like to be informed as soon as possible is to have the opportunity to be present during CPR and be present for their pet. Multiple respondents voiced their concern about adverse effects of CPR and the quality of life after successful ROSC. Specifically, the worry about neurologic impairment was emphasized. Other statements included fear of damage from chest compressions (eg, broken ribs and lung damage) and potentially prolonging suffering of animals with a terminal illness. Some respondents explained that they see CPR as “aggressive” or “brutal.”

Respondents also discussed the emotional burden for pet owners making medical decisions such as termination of resuscitation during CPR. They noted that they did not feel they could make a rational decision while being emotional. Few respondents explained their opposition to CPR in general and stated that they would choose a DNR status for their pets. Some respondents stated that the owner should make all decisions, and others commented that decisions on the care of a pet should be a joint decision between the owner and veterinarian.

**Discussion**

It was hypothesized that respondents would want to be called after the CPR of their pet has concluded and prefer the veterinarian to decide when to terminate CPR.

Small animal veterinary teaching hospital clients, as hypothesized, preferred to be informed about CPR after resuscitative efforts have been concluded. These results were even more significant if respondents were asked using a scenario question, where being informed as soon as possible or during CPR would remove personnel from the resuscitative efforts on their pet. Applying different styles of questions to assess this preference highlighted how these respondents prioritize their pet’s care over communication and indicated their willingness to compromise on the time of communication if it would affect care. This nuance was further emphasized by the free-text comments, where respondents stated they would appreciate early communication but that it should not compromise patient care. Unfortunately, due to the common labor shortages in the veterinary industry, drawing personnel away from resuscitative efforts to provide early communication is a realistic concern.

Of the smaller proportion of respondents wanting to be informed as soon as possible, some explained this decision by wanting to have the opportunity to be present during CPR. Family-witnessed CPR is a widely promoted practice in human medicine. It has been shown to reduce the psychological burden on family members and their risk of post-traumatic stress disorder, without significantly interfering with patients’ treatments. Owner-witnessed CPR is less common in veterinary medicine, and most veterinarians were opposed to this practice in a previous survey. When pet owners were asked about their preference for owner-witnessed CPR in a different survey, the majority felt it should be offered to the client. The results of our study indicate that if clients are informed early, on a case-by-case basis, offering owner-witnessed CPR may be considered.

Most respondents said they would prefer to talk to a non–medically trained staff member during CPR. In human medicine, it is common practice to have a designated family support person present during CPR, enabling the physician and healthcare teams to concentrate on the CPR while emotional support and explanations can be provided to the family. This role used to be occupied by nurses, but there has been a growing trend to shift to non–medically trained social workers and chaplains in an effort to alleviate the additional burden on nurses. With the growing field of veterinary social work and more social workers being available to veterinary institutions, training these professionals in CPR communication and potentially counseling of clients during owner-witnessed CPR could reduce the strain on veterinary medical personnel while enabling earlier communication. Alternatively, it may be applicable to train client-service representatives to fill this gap if social workers are not available.

As hypothesized, this study indicated that small animal veterinary teaching hospital clients want the veterinarian to decide when to terminate CPR. This correlates with human medicine practice, where the American Heart Association Ethics guidelines for CPR state that the decision to stop resuscitation always lies with the attending physician. Asking family members whether they wish to terminate CPR is considered unethical, with the reasoning that they lack the medical training to make this decision and undue emotional strain may potentially be placed on the family. It is, however, widely accepted to terminate resuscitation if family members proactively state this wish. This stands in stark contrast to the common veterinary practice of calling owners to acquire a decision on whether to terminate resuscitation. Human ethics guidelines state that if a medical treatment, such as CPR, is considered futile, doctors or other medical personnel are not obliged to provide the treatment, even if requested by patients or families. This means that physicians can decide to terminate CPR even if family members wish to continue. Medical futility is defined as a predicted survival of < 1%. This definition is difficult to apply to veterinary patients, as more data is required to determine the futility of CPR after different precipitating causes. The lack of definitions of futility of CPR.
or guidelines on when to terminate CPR in veterinary medicine can make this decision challenging for practitioners. Owner-witnessed CPR may have the potential to avoid unnecessary prolongation of CPR. Having family present during CPR in people significantly shortened duration of CPR and may reduce the amount of labor spent on resuscitative efforts that are considered futile.21

A common sentiment of the free-text comments was the desire for more preemptive communication and education on CPR. Public knowledge, specifically on the prognosis of CPR and likelihood of ROSC, is skewed in human as well as veterinary medicine.22,23 Even though the median of self-assessed CPR knowledge was high in this study, the estimated chances of survival to discharge after CPR were highly inflated. This further highlights the importance of client education to promote informed decisions before and during CPR.

This study had some limitations. The respondents were clients of an academic specialty hospital within the southeastern US and therefore may not represent the general pet-owning population. This survey yielded a response rate of only 7.5%. Online surveys enable researchers to reach a larger population; however, the response rates are historically lower than with other survey distribution strategies.24 Further, most of the respondents (75%) were female. There were significant differences between genders for different questions; however, it is important to note that the overall majority of answer choices remained constant between genders. This also held between other significant group differences, with the exception of the preferred timing of communication of veterinary HCPs. As the groups had the same answer choice majorities, it is less likely that the conclusion of this study would change with a different sample population. The median age of respondents at 54 years is significantly older than the US median age of 38.9 years.22 However, the only significant age differences were that male respondents were older and respondents wanting to be informed during CPR, and by a veterinary technician, were younger.

In conclusion, clients of an academic small animal specialty hospital prefer CPR communication after resuscitative efforts have concluded and prefer the veterinarian to decide when to terminate CPR. Our findings also highlighted that these clients prioritize patient care overall communication. To this point, there are no publications describing veterinary clients’ preferences for timing of communication during CPR. As mentioned, veterinarians predominantly inform owners about their pet undergoing CPR at the commencement of or during resuscitative efforts. This approach commonly relies on veterinarians’ personal preferences or hospital policies, which are not based on scientific evidence. Comparing the results presented here to the current practices of communication during CPR shows a wide discrepancy and highlights that changes may need to be made to better accommodate clients.

Cardiopulmonary resuscitation and its associated decisions can be difficult to generalize. It is important for clinicians to make decisions on owner communication and termination of resuscitation in the light of the individual situation, taking patient and client variables into account. Future studies are needed to reach larger and more diverse client populations. It is important that veterinary HCPs assess every CPR situation separately, considering pet owners’ emotional burden and personal preferences. It seems beneficial to educate and communicate with clients preemptively to establish individual protocols and set expectations for communication and decisions on CPR termination.

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References


**Supplementary Materials**

Supplementary materials are posted online at the journal website: avmajournals.avma.org.