


# The Impact of Pet Care Needs on Medical Decision-Making among Hospitalized Patients: A Cross-Sectional Analysis of Patient Experience

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## Abstract

Hospital-based protocols to support pet care needs for hospitalized patients may have potential to benefit patient health and wellbeing, but must be informed by experiences of hospitalized pet owners. The aim of this study was to determine the scope and need for pet care services among hospitalized patients. A panel of prior inpatients and their family members at a tertiary care center were surveyed about preferences, experiences, and need for assistance with pet care during hospitalization. Respondents (n = 113) expressed interest in a low/no-cost pet-boarding or foster program for adult patients struggling to find pet care assistance. The majority of respondents (n = 71; 63%) reported challenges securing pet care during a prior hospitalization, and/or knew someone who encountered similar challenges. Respondents also indicated that these challenges had a negative impact on health, recovery, or their own decision to receive medical care. Pet care challenges during hospitalization are likely common and have the potential to hamper medical decision-making and health outcomes of inpatients.

## Keywords

patient outcomes, pet owner experience, One Health, human-animal bond, patient-centered care

## Introduction

An unexpected or prolonged hospitalization can have far-reaching impact on the well-being of patients and their dependents, particularly patients with limited social or financial resources. For many patients, dependents include one or more pets (i.e., companion animals). The majority (60%) of households in the U.S. include pets.<sup>1</sup> Pets are increasingly considered to be valued as family members in American households,<sup>2</sup> and in many cases, the support and comfort of pets contribute to improved owner health and well-being.<sup>3</sup> However, the responsibilities of caring for a pet may also create barriers to health and well-being for owners, particularly for those who lack adequate resources. Indeed, emerging evidence suggests that pets can factor into healthcare decision-making, especially in the case of hospitalization.<sup>4,5</sup>

Unfortunately, formalized protocols and programs to assist patients with their animal care during admissions are

lacking. Consequently, if a patient's care team hears about a pet in need, social work is typically consulted. By that time, assistance may be limited by scarce resources within

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**Table 1.** Experience and Decision Making Response Rates (n = 113).

	No	Yes-Myself	Yes- Someone I know	Yes-both	Total Yes
Do you have at least one pet at home?	22 (19%)	–	–	–	91 (81%)
Have you (or anyone you know) ever faced challenges in finding someone to care for your pet(s) during a prior hospitalization?	42 (37%)	29 (26%)	28 (25%)	14 (12%)	71 (63%)
Has a need to care for pet(s) ever impacted your decision (or the decision of someone you know) to be ADMITTED to the hospital?	80 (71%)	5 (4%)	22 (19%)	6 (5%)	33 (29%)
Have you (or anyone you know) ever left the hospital before your medical providers thought you should, due to pet care responsibilities (this includes inpatient rehabilitation)?	89 (79%)	6 (5%)	18 (16%)	0 (0%)	24 (21%)
Have pet care responsibilities ever impacted your decision (or the decision of someone you know) to receive any type of recommended medical treatment or procedure (such as an elective surgery)?	71 (63%)	13 (12%)	23 (20%)	6 (5%)	42 (37%)
Do you think a need to care for pets affected your recovery or health, or the recovery/health of someone you know? <sup>a</sup>	23 (20%)	14 (12%)	27 (24%)	13 (12%)	54 (48%)
Do you think that an optional, low/no cost pet boarding or foster program should be offered to Michigan Medicine patients who do not have nearby family, friends, or neighbors to care for their pets while they are hospitalized?	10 (9%)	–	–	–	103 (91%)
If there was a pet fostering program available at Michigan Medicine, would you consider using it if you had to be in the hospital, or recommend it to someone you know?	15 (13%)	27 (24%)	18 (16%)	53 (47%)	98 (87%)

\*decimals rounded to nearest percent.

<sup>a</sup>32% responded not applicable.

the hospital and the community (e.g., humane societies per county or region). Without other options for temporary care, resource-constrained owners may be forced to surrender their pet to a shelter.<sup>6</sup> Once surrendered, pets are typically rehomed (if deemed adoptable), or in some cases are euthanized due to the animal's health or behavioral issues, and/or shelter overcrowding.<sup>7</sup> Some shelters may offer temporary boarding for pets in need, but these programs are rare. Additionally, in-shelter care may be associated with increased disease transmission among pets that are housed with recently rescued animals.<sup>8</sup> Understandably, this can make patients apprehensive of using shelter services, leaving hospital staff with fewer options. Even in situations where social support is available, pet care may not be prioritized by the patient's support network. In addition to jeopardized animal welfare, potential consequences of such gaps in care include increased patient and caregiver stress, deferral of medical services, non-adherence to treatment plans, and discharges against medical advice (AMA).

By leveraging the emerging concept of *One Health* (the interdependency and interconnectedness of human, animal, and environmental health<sup>9</sup>), hospital partnerships with local pet shelters, foundations, and animal welfare agencies have the potential to address this unmet need. However, steps toward forming such alliances must first be informed by data regarding the impact of the problem, patient preferences, and areas of greatest need. The purpose of this study was to assess patient experiences, their decision to receive medical care, and need for assistance regarding pet care while hospitalized in a tertiary care center.

## Methods

From January 17th-31st, 2020, in partnership with Michigan Medicine Office of Patient Experience (OPE)<sup>10</sup> at the University of Michigan, adult inpatient and family advisors were surveyed about their perspectives on pet care assistance needs for hospitalized patients. The mission of Michigan Medicine OPE is to promote and sustain the ideal patient experience through excellence in patient and family-centered care by leveraging best practices and resources across the institution. As part of this mission, OPE utilizes a group of "e-advisors" who have personal experiences as patients or family members of patients at Michigan Medicine, and who have consented to serving as a volunteer advisor to the health system via a virtual platform. Upon Institutional Review Board (IRB) approval, adult e-advisors were emailed a link to an anonymous Qualtrics®<sup>?</sup> survey circulated via the OPE e-advisor listserv.

## Measures

Participants were asked about demographic information, the number and type of pets that they care for, and whether they or someone they know had experienced one of several challenges or deferral of medical services due to pet care needs (Table 1). Responses for these questions were listed as categorical responses (i.e., "no", "yes-myself", "yes-someone I know", "yes-both myself and someone I know"; Table 1). Responses were then dichotomized to represent an affirmative (1) or negative (0) endorsement to the item in question.

Demographic characteristics were also categorical, for example age (e.g., 45-54), gender (e.g., non-conforming), and county of residence (e.g., Washtenaw). Race/ethnicity was initially categorical but, due to the low frequency of responses in seven non-white categories, this item was dichotomized as White (1) and All Others (2).

### Statistical Analysis

Descriptive statistics were used to analyze demographic data and other survey responses. Chi-Square tests were used to compare demographic characteristics between respondents who endorsed affirmative versus negative responses to each survey item. A power calculation suggested that multivariate regression analysis would be underpowered.

### Results

Among approximately 1,300 advisors on the listserv, data were received from 113 adult respondents representative of the larger e-advisor sample. Most were middle aged 55-64 ( $n=25$ ; 22%), or older adults age 65+ ( $n=35$ ; 31%) (Table 2). Ninety-eight (87%) respondents identified as White, 81 respondents (72%) identified as women, 28 respondents (25%) identified as men, and three respondents (3%) identified as gender non-conforming or transgender. Ninety-one (81%) reported having at least one pet at home.

### Challenges Securing Pet Care

A majority ( $n=71$ ; 63%) of all respondents experienced difficulty securing care for their pet(s) either during their own hospitalization ( $n=29$ ), a loved one's hospitalization ( $n=28$ ), or both ( $n=14$ ) (Table 1). By gender, gender non-conforming participants experienced the most challenges ( $n=3$ ; 100%), followed by females ( $n=55$ ; 68%), and males ( $n=13$ ; 46%). With respect to race, those in the 'All Others' category reported more challenges ( $n=7$ ; 70%) than Whites ( $n=61$ ; 62%). Wayne County residents reported more challenges ( $n=17$ ; 71%) than Washtenaw County residents ( $n=22$ ; 61%). Younger adults experienced more challenges securing pet care overall, with ten individuals (91%) aged 25-34 years endorsing challenges, while only 15 individuals (43%) of those aged 65 years and over experienced challenges. Chi-square tests revealed that those who endorsed challenges securing pet care differed significantly in age from those who had not experienced challenges ( $P=.024$ ) (Table 2).

### Decisions Regarding Medical Care

Nearly one third of respondents (29%) indicated that pet care needs impacted their decision to accept an offer of admission to the hospital personally ( $n=6$ ), the decision of someone they knew ( $n=21$ ), or both ( $n=5$ ) (Table 1). Pet care affected decision-making for admission in younger and

middle-aged adults more frequently than those age 65 years and over (Table 2). Decision to accept admission due to pet care needs impacted those in the 'Other Races' category more than White respondents. Pet care needs affected decisions to be admitted the most for gender non-conforming individuals, followed by females, and males. In terms of county of residence, pet care impacted the decision-making of Wayne County residents more than Washtenaw County residents. Trends approaching statistical significance emerged for a relationship between gender and decision for admission due to pet care needs.

Forty-two participants (37%) endorsed that their pet care responsibilities had affected their own decision to receive any type of recommended medical treatments or procedures, and/or the decision of someone they knew. The decision-making of younger adults aged 25-34 years was affected more often than that of adults age 65 years and over. Regarding gender, the decision making of non-conforming participants was affected most frequently, followed by that of females and males. Impact on decision-making to receive medical care was significantly associated with female gender ( $P=.006$ ) and a trend emerged toward an association between decision-making and (generally) younger age in bivariate analyses ( $P=.06$ ) (Table 2).

Eighteen respondents (16%) knew someone who left the hospital AMA due to pet care responsibilities, while six (5%) did so themselves. Younger participants aged 25-34 years ( $n=5$ ; 45%) had left AMA more frequently than those age 65 years and over. Those in the 'All Others' race category left AMA more frequently than Whites. All 3 gender-nonconforming respondents endorsed AMA departure, while  $n=19$  (23%) females, and  $n=28$  (7%) males endorsed AMA departure. In chi-square tests, gender identity was significantly associated with a decision to terminate hospitalization early in order to provide care for pets ( $P=.001$ ). Among the 77 respondents who (1) reported that they or someone they knew had experienced challenges finding someone to care for their pet(s) during a prior hospitalization, or (2) felt pet care responsibilities had impacted their decision to pursue medical treatments/procedures, hospital admissions, or duration of hospital stay, nearly half (48%) stated that pet care responsibilities had affected their recovery or health.

The overwhelming majority ( $n=103$ ; 91%) considered pet care responsibilities to be a high priority and felt that a low or no cost pet boarding or foster program should be offered to hospitalized patients who experience difficulty finding someone to care for their pet(s). Furthermore, 87% of participants endorsed interest in using a pet fostering program for themselves or someone they know if such a program were available through hospital partnerships.

### Discussion

The results of this novel cross-sectional study of inpatients and their families reveal a common but unmet need among hospitalized patients, and underscore an insufficiently

**Table 2.** Sample Characteristics and Bivariate Associations with Pet Care Challenges and Medical Decision-Making Outcomes.

Age (n = 110)	Challenge Securing Pet care (n = 113) n(%)		Decision to be admitted (n = 113) n(%)		Decision to receive any type of care (n = 113) n(%)		Decision to leave AMA (n = 113) n(%)		Affected recovery or health (n = 77) n(%)	
	<i>P</i> = .024*		<i>P</i> = .084		<i>P</i> = .06		<i>P</i> = .303		<i>P</i> = .169	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
18-24 (n = 1)	1 (100%)	0 (0%)	1 (100%)	0 (0%)	1 (100%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)	1 (100%)
25-34 (n = 11)	10 91%	1 9%	7 64%	4 36%	8 73%	3 27%	5 45%	6 55%	9 90%	1 10%
35-44 (n = 20)	13 65%	7 35%	4 20%	16 80%	6 30%	14 70%	5 25%	15 75%	11 85%	2 16%
45-54 (n = 18)	13 72%	5 28%	7 39%	11 61%	9 50%	9 50%	5 28%	13 72%	10 77%	3 23%
55-64 (n = 25)	19 76%	6 24%	8 32%	17 68%	8 32%	17 68%	4 16%	21 84%	12 60%	8 40%
65+ (n = 35)	15 43%	20 57%	7 20%	28 80%	10 29%	25 71%	5 14%	30 86%	12 60%	8 40%
Race/Ethnicity (n = 108)	<i>P</i> = .629		<i>P</i> = .451		<i>P</i> = .889		<i>P</i> = .480		<i>P</i> = .822	
White (n = 98)	Yes 61 62%	No 37 38%	Yes 28 29%	No 70 71%	Yes 37 38%	No 61 62%	Yes 7 20%	No 78 80%	Yes 47 71%	No 19 29%
All others (n = 10)	7 70%	3 30%	4 40%	6 60%	4 40%	6 60%	3 30%	7 70%	6 65%	2 25%
Gender Identity (n = 112)	<i>P</i> = .52		<i>P</i> = .058		<i>P</i> = .006*		<i>P</i> = .001*		<i>P</i> = .056	
Female (n = 81)	Yes 55 68%	No 26 32%	Yes 27 33%	No 54 67%	Yes 34 42%	No 47 58%	Yes 19 23%	No 62 77%	Yes 44 76%	No 15 25%
Male (n = 28)	13 46%	15 54%	4 14%	24 86%	5 18%	23 82%	2 7%	26 93%	7 47%	8 53%
Non- conforming (n = 3)	3 100%	0 0%	2 67%	1 33%	3 100%	0 0%	3 100%	0 0%	3 100%	0 0%
County (n = 106)	<i>P</i> = .728		<i>P</i> = .254		<i>P</i> = .711		<i>P</i> = .493		<i>P</i> = .445	
Washtenaw (n = 36)	Yes 22 61%	No 14 39%	Yes 9 25%	No 27 75%	Yes 13 36%	No 23 64%	Yes 9 25%	No 27 75%	Yes 16 64%	No 9 36%
Wayne (n = 24)	17 71%	7 29%	10 42%	14 58%	7 29%	17 71%	3 13%	21 88%	11 61%	7 39%
Other (n = 46)	29 63%	17 37%	11 24%	35 76%	18 39%	28 61%	10 22%	36 78%	23 77%	7 23%

\*Denotes significance.

Most values are rounded to the nearest whole percent and may not always equal 100%.

explored area in patient outcomes research. Our findings suggest that pet owners who are motivated to return home to provide care for their pets may be more likely to defer a necessary medical procedure, decline hospital admission, or leave admission prematurely or against medical advice—any of which could lead to negative health outcomes. Although our subgroup analyses should be interpreted with caution due to the sample size, this study also suggests that younger adults, women, and transgender/non-conforming individuals may be particularly vulnerable to these consequences. As patient-centered care is increasingly recognized

for its value, our findings highlight a new opportunity to enhance patient outcomes.

To our knowledge, this is the first study to examine the relationship between pet care needs and challenges with healthcare access, decision-making and compliance, expanding upon an understudied but burgeoning research focus. In a survey of U.S. pet owners, Applebaum et al.<sup>4</sup> found that 10-12% of respondents would hypothetically delay or avoid healthcare related to COVID-19 (i.e., testing, hospitalization) due to concern for their pet(s). The current study provides new information regarding actual hospital experiences

and self-reported outcomes. Furthermore, our sample endorsed a greater relative frequency of complications associated with pet ownership, an impact on ability to seek care, or early termination of care.

Although our pool of e-advisors included a higher proportion of pet owners than is found in the general population of the U.S. (81% vs. 60%), the striking number of respondents who deferred care may be particularly noteworthy, when considering the region sampled. For example, Washtenaw County has a higher median income (\$72,586) than both the U.S. at large, and nearby counties in Michigan, Ohio, and Indiana (with the notable exception of Oakland County, Michigan).<sup>11</sup> Washtenaw County also has disproportionately high levels of non-Hispanic White individuals compared to U.S. averages.<sup>12</sup> Given that most respondents were White and residing in Washtenaw County, our findings may in fact underestimate the need of inpatients in general, who may have fewer resources for support.

To this end, financial or social (e.g., friends or family) resources, which may affect pet care needs and decision to receive medical care, are important considerations when addressing health disparities and barriers to healthcare access. Indeed, those with fewest resources may paradoxically stand to benefit the most from pet companionship, and yet experience the most barriers in caring for pets. For example, Rhoades et al. (2015) found that homeless youth who owned pets had significantly less depression, and less loneliness than those who were not pet owners.<sup>13</sup> However, without other resources to care for their pets, over a tenth of respondents reported difficulty accessing human health care.<sup>13</sup> That said, even people with more resources can experience difficulty in finding emergent care for pets when faced with meeting their own health care needs.<sup>4,14</sup> Other influential factors impacting patient decision-making may include type and severity of their own medical condition, and the species and health of the pet. This highlights the need for consideration of factors outside of financial resources when determining which individuals may be at highest risk for altering medical care due to pet care needs.

### *Limitations*

This early-stage study in a novel area does have some limitations. Pet owners may be more likely to have responded to the survey, creating potential for selection bias. Low survey response, 113 of 1,300 e-advisors, could also have introduced selection bias. However, available demographic information suggests that the study respondents are generally representative of the larger e-advisor sample (e.g., 70% female, 26% male, 4% non-conforming, 78% White). This sample had access to electronic devices with internet, creating potential to also have a selection bias towards greater financial resources. Therefore, a possibility exists that the proportion of people who have experienced challenges in pet care during a hospitalization in our sample may be a conservative estimate of the actual public need in the area surveyed. As socioeconomic data were not available, some inferences could not be

drawn about financial resources beyond using residential county and known demographic information of the respondents as a rough proxy. Similarly, specific data on social support was not collected, and therefore inferences about social resources are limited. Participants reported retrospective outcomes which could introduce recall bias. Sample size may have limited the power to detect significant relationships between patient experiences and demographic characteristics, as well as the ability to conduct regression analyses. Moreover, statistical corrections for multiple inferences were not employed, to prioritize identification of novel relationships at the risk of spurious findings. These limitations highlight the importance of future research to address these gaps.

### *Future Directions*

Given the importance of pets to human health, follow-on studies are needed to explore how pet ownership impacts patients' healthcare decision-making, which may be influenced by many factors. Routine queries about pet care needs and increased provision of resources to patients could help improve communication and alleviate anxiety. As medical systems move toward a culture where patients play a more active role in their care, regular assessment of pet care needs, ideally before a hospitalization occurs, offers a new opportunity to improve patient care and outcomes. Patients who feel understood by their healthcare team are more engaged with the planning and adherence of their care, which helps to improve health outcomes, and lower costs.<sup>10</sup>

To this end, future research is needed to refine estimates of the scope of need for pet care services among hospitalized patients, on both the population and hospital referral region level. Such data could help hospital systems to better anticipate those in greatest need of hospital assessment protocols and resource programs to assist with pet care. Additional work in this area could also foster collaborations with appropriate animal care partners. Future analyses must consider clinical and socioeconomic predictors of need, especially including vulnerable populations (e.g., those lacking adequate social connections or economic resources). Data regarding the impact of such programs on psychosocial and patient reported outcomes are also needed, such as patient satisfaction, anxiety, depression, and animal welfare measures,

Additional research is also needed to shape the development of feasible yet comprehensive methods for pet care assistance, in a scalable way. In this regard, delineation of provider roles to spearhead this process also deserve further discussion. Social work is typically consulted if admitted patients endorse barriers, or when they want to leave against medical advice in order to provide care for their pet. However, lack of an early or "at the door" screening process to identify patients in need contributes to the urgency of AMA situations and ultimately limits available options. In the near absence of available research, one

question in which providers simply ask patients about their pets has been shown to improve the therapeutic alliance and outcomes.<sup>15</sup> This may also serve as a reminder for patients of all resource levels, who may have previously been preoccupied with an emergent situation, to initiate arrangements for pet care.

In terms of partnerships, community-based shelter programs that collaborate with hospital systems could offer a safer, more optimal alternative to shelter care. Foster care programs may offer patients more peace of mind. While separated from their beloved pets, patients may have concerns over the quality of pet care. It may distress patients to think that their pet is scared or alone, and not receiving the same level of care that the patient would provide. As shelters utilize many different staff and volunteers, it may also be difficult for the patient to receive pet welfare updates or establish rapport due to staff turnover. However, through use of a foster home, the patient may experience greater opportunities to receive updates, build rapport and trust, thereby alleviating anxiety. Foster caregivers typically provide care for extended periods of time,<sup>16</sup> so they are likely more skilled at supporting a scared or confused animal through the transition, and are more likely to be flexible if an admission is unexpectedly extended. Further, foster caregivers receive training and follow protocols to ensure the safety and health of a foster pet.<sup>17</sup>

## Conclusion

The welfare of pet companions is highly integrated and prioritized in the decision-making of hospitalized pet owners, but inpatient healthcare delivery has not caught up to this need. Additional efforts devoted toward understanding and addressing this issue offers potential to help inform programs and protocols for resources to positively impact healthcare outcomes. More research in this emerging area is necessary to determine ways to support the intersection of patient experience, One Health outcomes, and healthcare services. Healthcare provider efforts to assess pet care needs upon hospital admission could also facilitate better patient outcomes and patient satisfaction. This research could lead to partnerships with community resources to develop new programs for pet care for hospitalized patients.

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## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.


## Ethical Approval


This study was reviewed and granted “exempt” status by the IRB at Michigan Medicine (IRBMED), Ann Arbor, MI.

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## Statement of Human and Animal Rights

N/A, no animals were used in the course of this study.

## Statement of Informed Consent

Informed consent was provided by participants prior to serving as an e-advisor and engaging in the online survey.

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