



## Critical Steps for Determining Capacity to Refuse Emergency Medical Services Transport: A Modified Delphi Study

Eli A Carrillo, Steven P Ignell, Sharon Wulfovich, Michael J Vernon & Stefanie S Sebok-Syer

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## TITLE PAGE

### ***Critical Steps for Determining Capacity to Refuse Emergency Medical Services Transport: A Modified Delphi Study***

**Authors:** *Eli, A, Carrillo;<sup>1</sup> Steven, P, Ignell;<sup>2</sup> Sharon, Wulfovich;<sup>3</sup> Michael, J, Vernon;<sup>4</sup> Stefanie, S, Sebok-Syer;<sup>5</sup>*

**Author Affiliations:**

<sup>1</sup>*Department of Emergency Medicine, School of Medicine, Stanford University, 900 Welch Rd, Suite 350, Palo Alto, CA, 94304, eli.carrillo@stanford.edu, ORCID ID: 0000-0003-3032-8747*

<sup>2</sup>*Department of Emergency Medicine, School of Medicine, Stanford University, 900 Welch Rd, Suite 350, Palo Alto, CA, 94304, signell@stanford.edu*

<sup>3</sup>*Department of Emergency Medicine, School of Medicine, Stanford University, 900 Welch Rd, Suite 350, Palo Alto, CA, 94304, sharonws@stanford.edu*

<sup>4</sup>*Department of Emergency Medicine, School of Medicine, Stanford University, 900 Welch Rd, Suite 350, Palo Alto, CA, 94304, mjvernon@stanford.edu, ORCID ID: 0009-0002-4666-4921*

<sup>5</sup>*Department of Emergency Medicine, School of Medicine, Stanford University, 900 Welch Rd, Suite 350, Palo Alto, CA, 94304, ssyer@stanford.edu, ORCID ID: 0000-0002-3572-5971*

**Corresponding Author:** *Eli, A, Carrillo, <sup>1</sup>Department of Emergency Medicine, School of Medicine, Stanford University, 900 Welch Road, Suite 350, Palo Alto, CA, 94304, eli.carrillo@stanford.edu, 650.723.6576*

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## ABSTRACT

### **Critical Steps for Determining Capacity to Refuse Emergency Medical Services Transport: A Modified Delphi Study**

**OBJECTIVES:** Emergency physicians without specialized Emergency Medical Services (EMS) training are often required to provide online medical oversight. One common ethical question faced by these physicians is the assessment for decision-making capacity in a patient who does not accept EMS transport to the hospital. We sought expert consensus for a standardized set of guiding questions and recommendations to ensure a rigorous and feasible capacity assessment.

**METHODS:** A modified Delphi method approach was used to achieve group consensus among expert individuals. Nineteen physician experts were recruited from across the country, representing populations totaling over 22 million and a variety of urban, suburban, and rural practice environments. Experts completed a Round 1 survey that included 19 questions surrounding best practices for capacity evaluation among patients refusing transport. The threshold for consensus was predefined as 80% agreement. Participants gathered virtually meeting where the results from the first round were shared with the group. Discussion generated new items and refined the language of existing items. Following the virtual meeting, a Round 2 survey was conducted, and voted on by the panel for the items that did not meet consensus in Round 1.

**RESULTS:** After the first round, 15 of 19 items reached consensus. Three of the items that met consensus were universally noted to require language modification for clarification. A large portion of the discussion involved the proper method of integrating patient concerns around ambulance transport (e.g., cost of transport, financial concerns, social barriers) into the capacity assessment and whether alternate care options should be discussed. After the second round of voting, one additional item was reversed to meet consensus, resulting in a total of 16 items.

**CONCLUSIONS:** A consensus expert panel was able to agree upon 16 standardized steps to guide best practices and assist emergency physicians in real-time evaluation of patients that refuse EMS transport.

**Word Count:** 300

**Keywords:** Emergency Medical Services, Prehospital, Medical Oversight

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## MAIN DOCUMENT

### Critical Steps for Determining Capacity to Refuse Emergency Medical Services Transport: A Modified Delphi Study

#### INTRODUCTION

Emergency medical services (EMS) personnel are often faced with the challenge of making quick decisions with limited resources and incomplete patient histories. To assist EMS personnel in their daily practice, medical consultation and guidance is provided via online and offline medical oversight. Online, or direct oversight, includes real-time medical direction and consultation (usually by physicians), which is often provided via base stations (e.g., hospital-based emergency departments), mobile communication devices, or clinical supervision in the field (1). Emergency physicians answering these calls should understand the local EMS environment, protocols, EMS scope of practice, and knowledge of local healthcare systems. One frequently occurring challenge faced by EMS personnel and physicians is determining capacity in a patient with a high-risk complaint or presentation who does not accept transport to the hospital (2). During these situations, EMS personnel, in collaboration with physicians, are required to quickly assess a patient's healthcare decision-making capacity (2). These essential and high-risk decisions must take into account bioethical and medico-legal principles (e.g., informed consent of treatment or refusal of such treatment in order to make appropriate decisions about patients' care) (3-7). Capacity decision-making is particularly important as patients transported to the hospital tend to show improved outcomes whereas improper capacity assessment can lead to patient harm and put EMS personnel at legal risk (8-12). Multiple factors have been found to play a role in patient agreement to transport such as physician-patient communication and the assertiveness of a physician recommending transport (9,10). A study of capacity assessments in the prehospital setting found low inter-rater agreement among 28 emergency medicine physicians and 139 prehospital personnel (13). One approach to improve reliability in capacity assessments is through the use of a standardized instrument

or checklist. Checklists have shown not only to prevent and reduce error under stressful circumstances, but also improve patient safety and outcomes (14). While some states and local EMS agencies have “best practices” for capacity evaluations, there currently is no nationally recognized standard protocol for physicians providing EMS oversight. Standardized checklists that incorporate ethical standards for healthcare decision-making can improve the reliability and validity of capacity determinations. Four components are generally used to define capacity in healthcare: 1) understanding, 2) appreciation, 3) reasoning, and 4) expression of choice (8). Existing capacity evaluations are often time consuming and challenging to implement in acute care settings where both time and resources are limited. A widely utilized capacity assessment is the MacArthur Competence Assessment tool for treatment (MacCAT-T), which despite validation in a variety of populations, does not provide a “cutoff” score, relies on collateral information, and requires substantial training to use appropriately (15). More time efficient assessments such as the University of California San Diego (UCSD) Brief Assessment for Consent Capacity (UBACC) takes less than 5 minutes and may be better suited for time-sensitive situations, but has not been studied in the prehospital setting (16). Furthermore, the UBACC provides guidance for only a small proportion of capacity assessments that emergency medicine physicians respond to for medical oversight. Therefore, the aim of this study is to develop a checklist of critical questions for the prehospital setting when assessing the capacity of patients who refuse EMS transport.

## **METHODS**

### **Study Design**

A modified Delphi approach was used to identify consensus recommendations from a panel of experts in the field of prehospital emergency care. Modified Delphi methodology is a systematic approach used in the health sciences to generate knowledge and consensus among a group of experts (17). The method is widely used in developing competencies in various healthcare fields, especially when no “gold standard” of treatment or education exists (18–21). When conducted virtually, this method is especially useful in

gathering a wide variety of viewpoints from experts who are geographically dispersed; moreover, it has also been successfully used in prehospital research studies (22,23). In this instance, a modified Delphi was used to aid in determining what steps and questions are vitally important to ask patients when assessing medical decision-making capacity via telecommunications such as a base phone or radio. This study was approved by the Institutional Review Board at Stanford University.

### **Modified Delphi panel participants**

A list of academic and community EMS medical directors was created based on scholarship, advocacy, or reputation in the field of online medical consultation or capacity assessments. From this list, we identified those individuals who have published in this domain or have an active leadership role in state or regional EMS committees. A convenience sample of individual members were contacted and, when not available or willing to participate, we used a snowball sampling approach to elicit a recommendation for suitable alternates to represent their region or center. Expert panelist participation was voluntary, and participants were provided a \$30 gift card for online food delivery to be used during the lunchtime virtual meeting during Round 2. A group of 19 expert physicians, who routinely provide online medical oversight and/or are responsible for quality assurance, were identified for inclusion in the study. Of these physicians, 95% obtained initial board certification in emergency medicine and 5% obtained board certification in psychiatry. For additional participant characteristics please see Table 1.

### **Data collection and analysis**

The first round of the Delphi was completed asynchronously. The initial questionnaire of 44 items was built into a Qualtrics survey and sent via email by MJV to all 19 participants on October 10th, 2022. Each question was formatted with the following question stem: "In accordance with best practices for assessing medical decision making, the physician/provider should..." Participants were also asked about

demographic characteristics and general perspectives about how online medical oversight is provided. Participants were given until the start of the virtual session to complete the first-round survey. On November 3<sup>rd</sup>, 2022, 12 of our 19 experts, which included both emergency medicine and psychiatry representation, met synchronously via online video conference to review the results from the first round of voting. This session was recorded and transcribed so that it could be shared with and reviewed by participants unable to attend the synchronous meeting. To begin, EC welcomed the Delphi panel participants and explained the rationale for conducting this research project. Then, SSS explained Modified Delphi methodology and described what is expected throughout the consensus process (Figure 1). This included sharing that for an item to move forward, an 80% level of agreement (i.e., 16 votes) from the panel needed to occur. Once panelists understood the process, data from the first round of voting was shared.

In the virtual meeting, the research team shared items (n=15) that reached 80% consensus (Table 1). Then, question items were shared that reached consensus, but where participants noted that language needed to be modified (n=3); each of these items were discussed by the panel and once there was agreement about how to modify the language, they were put forth for voting in Round 2. For items that did not reach consensus (n=4), EC and SSS asked the panelists open-ended questions to prompt the panelists to share reasons why they thought a particular item should or should not be included. This controlled feedback and discussion allowed the panelists to discuss the essence of what is vitally important when providing online medical oversight. Some of the items underwent language modifications as a result. Between November 3<sup>rd</sup>, 2022 and March 30<sup>th</sup>, 2023, a list of all items that did not meet consensus, as well as those items where language was modified, were sent to all panel participants for Round 2 of voting. Any panelist who could not attend the virtual meeting was able to vote via email or the Qualtrics survey.



## RESULTS

In Round 1, participants identified consensus (greater than 80% agreement) without any language modifications for 12 items. Before Round 2 voting, some questions (n=3) required further clarification or language modifications despite meeting consensus. These questions included: explaining the physician's role in the discussion during initial introductions, identifying communication barriers (not simply "language barriers"), modifying language from "discuss the consequences of transport refusal" to "discuss the risks of transport refusal and benefits of transport". A large proportion of time spent during the virtual meeting involved the discussion of how to incorporate a patient's financial concerns of transport into recommended care and alternative plans. In the end, no consensus was reached about whether this should be a universal recommendation in all care settings throughout the United States (U.S.). Although financial considerations might factor into a patient's decision to accept or refuse transport, the statement was modified so that it would not be interpreted to indicate a potential Emergency Medical Treatment and Active Labor Act (EMTALA) violation as a financial screening question. There was also widespread disagreement with the recommendation of no-transport based on a paramedic's evaluation of "alert and oriented to person, place, time, event, normal glucose, and still refuses transport", indicating the panel participants desire to keep the physician providing medical consultation and capacity evaluation independent from evaluations provided by EMS personnel. After two rounds of voting, 16 questions achieved consensus, and these became the formal checklist items of critical steps for prehospital capacity assessment (Figure 1).

In the first round of voting, participants were also asked their opinion about what qualifications and additional training should be required to perform online medical consultation for capacity evaluations. Only 42% of respondents felt that the physician should be fellowship trained in EMS. A higher percentage (74%), believed the provider should be a board-certified EM physician with additional local

training, but 84% of respondents agreed the physician should “be active in EMS training or education.” The opinion questions were not asked again in subsequent rounds.

## **DISCUSSION**

Although the role of physicians in assisting prehospital personnel with against medical advice (AMA) situations and capacity decisions has been established for many years, there is great variability in the methods of determining capacity for an informed refusal. Unfortunately, this variability can lead to poor or half-hearted attempts at shared decision-making, often with patients who would benefit most from such discussions. On the other hand, a more thorough evaluation could mitigate the downstream effects of using physical or chemical restraints on patients with medical decision-making capacity. Various questions in the Delphi rounds seem obvious as required parts of an evaluation; however, the process of improving the quality of these interactions begins with basic understanding of the constituent parts of a complete capacity evaluation. Giving non-EMS trained emergency physicians the proper training and tools to provide quality online-medical oversight has recently been the focus of the National Association of EMS Physicians (NAEMSP) Education Committee (24). Using the critical steps as framework provides a minimum standard and allows for ongoing quality improvement initiatives and benchmarking. Already, various memory techniques are being developed to assist paramedics in the complex task of capacity assessments (25). The use of standard questions by the physician, and new QI initiatives such as audio recordings of all AMA evaluations, are already being instituted in various EMS agencies throughout the U.S. to mitigate concerns regarding legal liability from improper refusals (26). The results of this study can have a direct impact on the process of training physicians who take online medical consultation calls as well as on the process by which paramedics are taught to assess capacity to make medical decisions. Due to the collaborative, interdependent relationship between a physician and paramedic, developing shared language, definitions, and purpose is imperative (27). The critical steps identified and endorsed

by experts in this study presents a starting point for a larger, national conversation that could facilitate the adoption of a unified framework for both EMS personnel and physicians.

The application of online medical consultation to AMA non-transporters elicits many ethical principles including patient autonomy, beneficence, non-maleficence, distributive justice and safety (28).

Numerical data and assessment tools cannot adequately assess the context of these encounters and is insufficient to fully assess capacity in the acute setting; however, our experts offer a consensus framework for training physicians to provide medical consultation. The statements formulated by this group should be refined and their application further studied across a variety of patient primary impressions and amongst a diverse pool of patients. Future research should identify physician and EMS practitioner comfort and reliability with modified instruments for capacity assessment and should determine final disposition and outcomes of patients who are deemed to have capacity but are not initially transported by EMS.

## **LIMITATIONS**

There are limitations in adopting Modified Delphi methodology for aggregating knowledge and generating consensus that include the bias of recruiting experts, difficulty in defining consensus, and the assumption that EMS experts are sufficiently knowledgeable in prehospital capacity assessments. In this case, some invitees were unable to participate due to schedule conflicts or because they felt someone else in their department had more subject matter expertise. Our panel consisted of practicing emergency medicine physicians and psychiatrists in the U.S., and therefore, may not be applicable to EMS systems throughout the rest of the world where individual civil rights and medico-legal standards differ. Although we expect the content of a capacity evaluation to remain stable throughout the U.S., our study involved a large proportion of expert participants who practice EMS medical direction in the Western regions. This may unknowingly bias expert opinion of how local laws and policies interact with

the liability inherent in refusals of transport. Additionally, the research team made no deliberate attempt to filter or select participants based on sex or race. It is possible that a different cohort of participants may would respond differently to the survey responses.

## **CONCLUSIONS**

The practice of EMS online medical oversight includes the assessment of patients who require a capacity evaluation to determine if they can make informed medical decisions. When done properly, these evaluations require additional time and an understanding of the critical steps of the capacity exam. This study represents what a panel of experts agreed upon as critical steps and should be utilized by emergency medicine physicians when providing online medical consultation in practice.

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## TABLE CAPTIONS & FIGURE CAPTIONS

Figure 1: Example Worksheet

### High Risk AMA

Unit# \_\_\_\_\_ /Medic \_\_\_\_\_

### History:

### Vitals:

HR \_\_\_\_\_ BP \_\_\_\_\_ RR \_\_\_\_\_ O2 \_\_\_\_\_ Temp \_\_\_\_\_ GCS \_\_\_\_\_

### Other data:

### Prepare

- Obtain **history and vitals** from the paramedic prior to conversing with the patient
- Introduce** themselves to the patient and explain the physician's/provider's role
- Identify communication barriers

### Interview

- Ask the patient's understanding of the situation
- Ask the patient explicitly why they are refusing transport
- Perform an independent capacity evaluation
  - 1) Assess the patient's reasoning and understanding of medical information presented by the paramedic
  - 2) Discuss the risks of transport refusal and benefits of transport
  - 3) Assess patient's ability to convey a choice
  - 4) Assess consistency of patients' judgement/reasoning
- Express concern around the patient's condition when in agreement that the patient is a "high risk" AMA
- Summarize the shared decision at the end of the encounter

### Caveats/Chart

- Consider the role of drugs/alcohol during the evaluation
- Document the encounter either via written form or recorded line
- Consider policies and resources of the local EMS system

Figure 1 footnotes: Example compilation of recommendations



Table 1: Demographics of Expert Panel

<b>Characteristic</b>	<b>Participants (n=19)</b>
Gender (%)	
<i>Female</i>	47
<i>Male</i>	53
Years in EMS (median, interquartile range, range)	12, 8-27, 3-44
Distribution across regions in the United States (%)	
<i>West</i>	74
<i>Northeast</i>	16
<i>South</i>	5
<i>Midwest</i>	5
EMS board certified (%)	84
Currently holds a leadership/oversight role for online medical control (%)	74

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Table 2: 16 retained items for determining capacity to refuse EMS transport

<b>Statement</b>	<b>N (%) Agree</b>	<b>Delphi Round in which final status was determined</b>	<b>Final Status</b>
Q1: Obtain history and vitals from the paramedic prior to conversing with the patient.	19 (100)	1	Retained
Q2: Always ask the paramedic to perform a blood sugar check.	0 (0)	2	Resubmitted, Dropped
Q3: Introduce themselves to the patient	19 (100)	2	Revised into Q4, Retained
Q4: Introduce themselves to the patient and explain the physician's/provider's role	19 (100)	2	Revised, Retained
Q5: Ask the patient's understanding of the situation ("why medics were called").	18 (94.74)	1	Retained
Q6: Ask the patient explicitly why they are refusing transport.	18 (94.74)	1	Retained
Q7: Express concern around the patient's condition when in agreement that the patient is a "high risk" AMA.	18 (94.74)	1	Retained
Q8: Perform an independent capacity evaluation.	18 (94.74)	1	Retained
Q9: Identify language barriers.	19 (100)	2	Revised into Q 10, Retained
Q10: Identify communications (e.g., language, hard of hearing, or dementia)	19 (100)	2	Revised, Retained
Q11: Assess patient's reasoning and understanding of medical information presented by the paramedic.	19 (100)	1	Retained
Q12: Assess consistency of patients' judgements/reasoning	19 (100)	1	Retained
Q13: Discuss consequences of transport refusal.	19 (100)	2	Revised into Q14, Retained
Q14: Discuss the risks of transport refusal and benefits of transport	19 (100)	2	Revised, Retained
Q15: Assess patient's ability to convey a choice.	19 (100)	1	Retained
Q16: Consider the role of drugs/alcohol during the evaluation.	19 (100)	1	Retained

Q17: Consider patient's ability to pay, preference to avoid a bill, or insurance status, when recommending evaluation in an Emergency Department.	3 (15.79)	2	Revised into Q18 (Dropped)
Q18: If the patient expresses financial concerns (e.g., ability to pay, insurance status) or other social concerns, recommend alternative care options and plans.	15 (78.95)	2	Revised, Dropped
Q19: Defer decision making to the paramedic on scene when there is disagreement between physician and the paramedic.	3 (15.79)	2	Resubmitted, Dropped
Q20: Summarize the shared decision at the end of the encounter.	19 (100)	1	Retained
Q21: Recommend no-transport if the patient is alert and oriented to person, place, time, event, has a normal glucose, and still refuses treatment.	3 (15.79)	1	Revised into Q22, Retained
Q22: Allow EMS to accept patient refusal if the patient is determined to have capacity	18 (97.74)	2	Revised, Retained
Q23: Document the AMA encounter either via written form or recorded line.	19 (100)	1	Retained
Q24: Consider policies and resources of the local EMS system.	19 (100)	1	Retained

Table 2 footnotes: \*N (%) Agree = The number and percentage of panelists who endorsed the item as important during the round in which that item was retained.