

ICU clinicians' experiences of terminal weaning and extubation

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Title: ICU Clinicians' Experiences of Terminal Weaning and Extubation

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Abstract

Context

Aside from spontaneous death, a majority of ICU deaths occur after a decision to either withhold or withdraw life-sustaining measures, including withdrawal of ventilatory support. While terminal weaning or terminal extubation are both used, the lack of evidence on the superiority of one method over the other can create challenges for ICU clinicians. There is a need to explore clinicians' experiences related to terminal weaning/extubation to understand their decision-making processes as well as the context and mechanisms that guide this process.

Objectives

This study aimed to explore ICU clinicians' experiences of Terminal Weaning of Mechanical Ventilation (TWMV) in order to better understand the process, and clinicians' feelings about the process.

Methods

This study used an exploratory descriptive qualitative design. Data were collected via semi-structured, face-to-face interviews with 20 ICU clinicians. An inductive, data driven thematic analysis approach was used for data analysis.

Results

Analysis of the data resulted in four themes: Fine-tuning the Process of TWMV; Focusing on the Family; Ensuring Patient-Centered Care; and Impact on Healthcare Clinicians and Support Needs.

Conclusions

The identified themes provide insight into the complexity of the withdrawal of mechanical ventilation within the context of end-of-life care in the ICU. The themes highlight the need for clear communication of a TWMV plan between clinicians to avoid conflict during the process, ensuring medication is in place for potential distressing symptoms, incorporating patient and family wishes in planning, supporting the family during the process, and training and support for clinicians.

Keywords

Terminal Weaning; Terminal Extubation; Intensive Care; end-of-life; Qualitative Interviews.

Introduction

Intensive care unit (ICU) clinicians are known globally for their ability to provide intensive and specialized care, including enhanced monitoring and other life-sustaining measures for critically ill patients.¹ Despite such abilities, nearly 20 percent of patients succumb to their illnesses and die in the ICU.² Aside from spontaneous death because of events like cardiac arrest, the vast majority of ICU deaths occur after a decision to either withhold or withdraw life-sustaining measures (WLSM).³

During the WLSM, ventilatory support withdrawal may be completed by two means: terminal weaning (step-wise, gradual reductions in oxygen and ventilation) or terminal extubation (ceasing ventilatory support and removal of endotracheal tube in one-step).⁴ While both of these methods (in isolation or in combination) are commonly used globally, there is little evidence to suggest superiority of one method over the other.⁵ It is generally accepted that terminal weaning allows patients to comfortably transition to extubation, if they survive to extubation, but there may be others where terminal weaning of mechanical ventilation (TWMV) is not needed due to their minimal requirements of ventilatory support; the key is that the optimal approach is unknown. The lack of clear protocols regarding best practices for ending ventilatory support has led clinicians to make decisions based on experience and preference. Studies have found that nurses find the experiences of WLSM to be complex and challenging.^{6,7} However, these studies focused solely on nursing and specificity related to terminal weaning and extubation was limited. Therefore, there is a need to explore all clinicians' experiences related to the practice of terminal weaning and terminal extubation to understand their decision-making processes as well as the context and mechanisms that guide this process.

The aim of this study was to explore ICU clinicians' experiences of terminal weaning/extubation in order to better understand the process, and clinicians' feelings about the process. Specifically, communication about the decisions between clinicians and patients' relatives or substitute decision makers, and the impact of the decision on patients, their relatives, and the clinicians, including what support is required for all involved.

Methods

The study used an exploratory descriptive qualitative design.^{8,9} Data collection occurred between June 2019 and February 2020.

The study was completed in a 28-bed medical ICU at a Level I trauma, large academic medical center, in a metropolitan area. This unit, which experiences a high mortality rate (approximately 20%), cares for adults with both acute and chronic conditions. Due to the complexity of patients cared for and the frequently high levels of oxygen required for sustainment, TWMV is commonly used in this unit prior to extubation, if extubation is to occur. All physicians (attendings, fellows, and residents), Acute Care Nurse Practitioners (ACNP), Physician Assistants (PA), Registered Nurses (RN), and Respiratory Therapists (RT) in this ICU were invited to participate. The study was approved by the relevant Institutional Review Board. Written consent was obtained from all study participants.

Data were collected via semi-structured, face-to-face interviews that followed an interview guide that was created based on the literature and expertise of the study team (Table 1). Interviews were conducted by one or a combination of two team members. Both interviewers were experienced qualitative researchers with an established relationship with the unit, but no formal oversight. Interviews took place in a private room near the ICU and were audio recorded

and transcribed verbatim using secure software. The COnsolidated criteria for REporting Qualitative studies (COREQ) guidelines were utilized to report this study.¹⁰

Following verbatim transcription, all transcripts were uploaded to a qualitative data management software program (NVivo v12). An inductive, data driven approach for data analysis was used.¹¹ Initially, six transcripts were independently read by the whole study team to become familiar with the raw data and then codes were independently developed. Next, a comparison for agreement on the description, definition, and label of codes occurred. This approach provided sufficient reliability to continue coding the remaining manuscripts before proceeding to further analysis and interpretation.¹² The remaining 14 transcripts were coded by two team members who met regularly to discuss coding progress and process. Inter-coder reliability was assessed using NVivo software at a Kappa Coefficient of 0.90 or greater. The next step was undertaken by one member of the study team and included scaling and clustering of the codes.¹¹ For scaling, two or more similar codes were combined into one *category* and then individual codes and categories were clustered into meaningful groups or *themes*. Clustering into themes was an empirical approach which was based on perceived interrelationships between codes and categories. Following scaling and clustering, the study team met again to refine, validate, and agree on the final themes.

Results

Twenty ICU clinicians (nurses=10, physicians=5, ACNPs=3, RT=1, PA=1) participated in the study. Sample demographics are reported in Table 2. Participants had variable years of practice, their age ranged from 24 to 52, and most were female (75%) and white (85%).

Interviews lasted between 20 and 43 minutes. Analysis of the data resulted in four themes: *Fine-tuning the Process of TWMV*; *Focusing on the Family*; *Ensuring Patient-Centered*

Care; and Impact on Healthcare Clinicians and Support Needs. Combined, the themes provide insight and detail into the complexity of the withdrawal of mechanical ventilation within the context of end-of-life (EOL) care in the ICU.

Fine-tuning the Process of Terminal Weaning of Mechanical Ventilation

This theme includes three categories: *Communication; What Happens During TWMV;* and *Coordination During TWMV.* The use of the term process is particularly useful when describing what happens during the withdrawal of mechanical ventilation at the EOL in the ICU. It implies that it is initiated, has subsequent steps, and has a conclusion. TWMV is a process that requires high-levels of coordination and is necessarily prefaced on communication.

Communication

Communication in TWMV can be described from two perspectives. First, in establishing a plan of care and decision-making specific to WLSM that is formalized through a family meeting, and second, prior to and during TWMV.

The family meeting is the primary communication mechanism for decision-making related to shifting the direction of goals of care from curative to comfort and EOL focused. The meeting serves as a mechanism to provide families an update on the patient's overall status, to discuss prognosis and limitations of treatment, to discuss patient and family members' values, and establish a plan of care for the WLSM. The meeting also provides an opportunity to address concerns or needs the family might have. As one participant said:

"We'll do...a family meeting and it's very respectful. We'll go into a quiet room and we'll try to get as many members of the healthcare team there as possible - of course the physician, the nurses, occasionally the respiratory therapist and there'll also be a Chaplain nearby. And we'll kind of explain to the family, 'This is what we're going to do.'"

While decision-making and introduction to the WLSM is a main topic of conversation in the family meeting, communication extends and remains constant throughout the process. Nurse participants, in particular, remarked on the need to ensure that family members understood what would happen during TWMV; they spoke openly with families to determine their perceptions of comfort and any preferences they might have:

“A lot of it is talking with the family to see what the family wants. Some people would like to leave the breathing tube in...”

Physicians also highlighted the primary role the nurse has in communicating with the family:

“The nurse is more responsible with letting the family know how we do things and what the process is.”

What Happens During Terminal Weaning of Mechanical Ventilation

Participants spoke in detail about what happens during TWMV. An initial step was to assess the patient’s baseline status prior to beginning the WLSM, recognizing that each instance was different and required an individualized approach:

“We...assessed the patient and how we think they’re going to do and what their individual needs are. Vasopressors or not, high vent settings or not, tons of secretions or not. Things that ...we see being...a problem ...And then once we kind of decide a plan of action, the doctors will be there, and they will put in...their orders that we all need.”

Some participants stated there was a unit-specific protocol while others called for a withdrawal protocol that provided direction and steps. One participant remarked:

“We know there is a protocol in place....you can’t just walk in and be like, ‘Okay, we’re ready, let’s pull this tube out.’ We know that...the orders for the terminal wean protocol need to be

placed in Cerner [the electronic medical record] and then we contact respiratory to start making the necessary changes to start weaning.”

In contrast, another participant stated:

“If I could do it the perfect way there’d be a nice little protocol...like days when people are pulled from places they don’t normally work and it’s new to them, so they need like an algorithm developed...we definitely have a protocol here...”

Despite the protocol, the progression of dying was individualized. Participants reflected on the variability in the progression of dying, particularly in terms of time following TWMV. A participant reflected:

“It definitely varies depending on the patients, but I’d say within two to three hours we’ll have the tube out or sometimes even faster than that. And once the endotracheal tube comes out,.... I’ve also experienced different timeframes of when the patient passes away. Sometimes it’s almost immediately; sometimes it does take...sometimes not even on my shift. I’ll come in the next day and the patient will still be you know, here with us.”

All participants reported on the medications used before and during the TWMV process to avoid distress for the patient. Pre-medicating with bronchodilators and carefully titrating analgesia were frequently mentioned. Analgesia was more commonly given intravenously to ensure quick onset and maintenance. Consideration was also given to medications for preventing or reducing patients’ agitation and secretions during the process:

“...usually we’ll pre-medicate, like with respiratory they’ll give one before they extubate just to give them some more comfort before the tube is taken out. But yeah, just being comfortable. I hate when someone just looks distressed. Fentanyl nebs are the biggest thing that I use, sometimes glycopyrrrolate if they’re like sounding gurgly. Sometimes depending on the

individual, usually a doctor will put in just fentanyl pushes if they're in pain, Ativan if they're like super-anxious."

On occasion, participants had not anticipated the severity of symptoms patients would experience during the process, such as excessive secretions, and regretted not being ready for any eventuality as it takes time to prepare, administer medications, and control the patient's symptoms:

"... [the patient] couldn't manage his secretions, looked to be in distress, was making a lot of not good sounds... and I wasn't prepared with pockets full of Glycopyrrolate, Midazolam and Fentanyl, but I got what I needed, but it took about five minutes for me to get him to look comfortable."

Coordination During Terminal Weaning of Mechanical Ventilation

Because of the various elements of TWMV, the process requires coordination and collaboration. Each team member assumes a role and then together, they coordinate to enact TWMV. The nurse assumed a primary responsibility to coordinate care and respiratory therapists played a key role in ventilatory management. A participant described:

"It's definitely one of those things where you truly need interdisciplinary collaboration....they [referring to the NPs or physicians] put the orders in, then nursing...implements them, does education with the family, collaborates with the respiratory therapists about the things they do."

Staffing levels and coordinating effort across disciplines could sometimes be challenging. In fact, a couple of participants reported how RNs and RTs were not always in agreement on the when and how's of TWMVs. Participants described the challenges they experienced because of the multiple, simultaneous demands of the critical care environment:

“Doctors are intubating three other people; they don’t put the order in, in time. You’re trying to support the family. They finally made this hard decision. You’re trying to follow through with it. You can’t get your orders in so you can’t do it. Respiratory [therapy’s] like, ‘I’m going on three MRI trips. I have a 30-minute window. The doctor didn’t put the orders in.’ So, you don’t get your 30-minute window. So, instead of having an hour or two to pop back in and out and help adjust things and give sedation as needed to comfortably extubate the patient, you have this jagged prolonged or shortened situation. So, staffing is the number one barrier in my personal opinion.”

Focusing on the Family

Focusing on the Family was comprised of *Preparing the Family for TWMV* and *Ensuring Family-Centered Care*. Focusing on the family required clinicians to be attentive to their needs and involving them as active participants in the TWMV process. It involved preparing them for TWMV, ensuring individualized care, and making meaningful and engaging efforts to promote family centered care.

Preparing the Family for Terminal Weaning of Mechanical Ventilation

Preparing family members for the TWMV was a primary focus of the family meeting. However, afterwards, preparing the family was also related to informing them about the more nuanced aspects of TWMV, including their preferences for staying in the room, removing ventilatory support (leave endotracheal tube in or extubate), the sights and sounds, and the process of dying. Focusing on the family also included efforts to ensure that everyone who the family felt should be present, was there if possible.

“...After the family meeting, typically we follow-up with an open-ended question, ‘What do you understand? What are you thinking about? Who else do we need to get here? What’s the

timeline?’ that kind of stuff. And then I’ll kind of glaze over like, ‘This is the process that we have, like we’re gonna take the pressers off, we’re gonna take the ventilator off. We have these medicines to support the patient, we’re gonna have this environment where you can be with your loved one. We don’t know if it’s gonna be moments or longer.’”

Ensuring Family-Centered Care

Throughout the TWMV process it was evident in the participants’ accounts that family-centered care was a priority. Participants spoke of the ways in which they engaged and involved family members in the withdrawal process and of the ways they aimed to create positive and memorable experiences for them. Involving the family in the process of TWMV often included consulting family members about next steps. One participant described how they engaged with a family member at the bedside that was actively involved in the TWMV process:

“You know, if there’s a point where you’re feeling like enough is enough, we can turn all these drips off, make them really comfortable, give them pain medicine, and pull that breathing tube out so that they can pass peacefully and look their normal self.”

Ensuring Patient-Centered Care

Participants reported how they practiced patient-centered care during TWMV. This theme was comprised of two categories: *Actualizing Individualized Care* and *The Transition to Comfort Care*.

Actualizing Individualized Care

In relation to individualized care, while the focus was on withdrawal of mechanical ventilation, the comfort of the patient was the ultimate aim. Participants acknowledged that each patient is different with varying conditions and severity of symptoms, hence different approaches were used, demonstrating individualized care:

“I think when someone’s like on really high vent settings and they’re so sick, like cutting down by 10% FI02 every hour is not going to be comfortable for the individual.”

Another added:

“It’s different for every patient because every patient has different symptom burdens and different diseases processes and some people you thought were gonna be fine and probably last hours, days after extubation, some people, you’re sure are gonna die like the second that you turn off the ventilator and it varies too.”

The ideal, as expressed by the participants, was to end the ventilator weaning with extubating the patient, as this seemed to provide more comfort for the dying patient no matter the initial ventilator settings:

“...I feel like every patient should have the tube out at some point. I don’t think it’s fair for them to die with an ET tube in their mouth or an NG tube ‘cause none of that stuff is comfortable.”

Consideration was also given to patients’ dignity during the process of TWMV, where relatives were asked to leave the room during extubation, preserving the patient’s dignity and then were invited back in:

“...it’s going to be gross-looking and it can be, but it’s also quick so sometimes we’ll just say, ‘Step on the other side of the curtain. It’ll take about 15 seconds and we’ll have them looking beautiful.’”

Participants also referred to intubated patients who were alert, and described how they were making every effort to keep them informed of their condition, identify their wishes in terms of TWMV, act on them, and provide comfort after extubation:

“...by the end of our shift we ended up withdrawing [life sustaining measures] from him, but he was still coherent the entire time. I sat down with him ... and I told him, ‘Look, you’re gonna die

but it's up to you how you want to die. Do you want to die without the tube in your mouth or do you want to continue?' And he finally said, 'I want the tube out.'"

The Transition to Comfort Care

The transition to comfort care was gradual and initial tasks included preparing the patient to be physically clean and the environment to be less clinical, indicating respect for the individual approaching death. Both non-pharmacological and pharmacological interventions were used to ensure comfort for the patient. Non-pharmacological interventions were individualized based on patients' wishes and culture. On occasion, family members provided comfort by practicing death rituals which appeared to have a positive effect on the patient following extubation:

"This was a lovely terminal extubation. They had actually already extubated her before I started my shift and I came in. She was off the vent and there were probably 15 people in there, a large Black family. Everyone was singing gospel music to this patient, and this person was minimally awake, not interacting but eyes open, a little bit of agonal breathing but not too bad and didn't need a single drug from me because the family was doing such a nice job of creating the environment that the patient needed to say goodbye."

Impact on Healthcare Clinicians and Support Needs

The impact on healthcare clinicians and support theme consisted of two categories: *Effect on Healthcare Clinicians* and *Support and Training for Healthcare Clinicians*. Participants in this study described how previous experiences had shaped their views about TWMPV and how they were affected by practices in their workplace. In addition, they expressed their support and training needs.

Effect on Healthcare Clinicians

Previous experiences included both personal and general experiences in the ICU. One participant described how an experience with a family member dying in the ICU had affected (her) views about terminal extubation:

“my grandmother was on the ventilator... And my last memory of her is with an endotracheal tube in and she had like crusty stuff on her mouth, and it was just a horrible – like I can – I have that mental picture right now and I will never forget it. And I wish knowing everything I know now, I wish back then I had the knowledge because I would’ve advocated to have had her terminally extubated...”

The process of TWMV and the exposure to death had a considerable impact on healthcare clinicians. Participants spoke about the need to debrief or reach out for support after a death. Participants also vividly described the frequency of terminal withdrawals in their ICU, and how sometimes when a terminal withdrawal was in progress it may not even be noticed by other staff on the same unit:

“It’s such a big unit and there could be multiple terminal weans going on at the same time. I mean, we’ve had weeks where we have like eleven people who died and it’s just, ‘Oh my gosh, a patient died?’ I had no idea.”

Support and Training for Healthcare Clinicians

Support needs and how they were addressed were predominantly described in relation to novice nurses. Novice nurses may not be fully aware of all the medications required, how to coordinate the whole process during TWMV, or how to support the family:

“I think when you’re new it’s really overwhelming. I also think you don’t require to know like how many, how much drugs you’re gonna have to give them which is like usually a lot. So, I think you kind of underestimate everything when you’re new.”

Another added:

“...Even with the newer nurse, I’ll pull them out in the hallway and say let’s come up with a plan now. Let’s talk about it now so that we don’t have this what are you doing kind of conversation, in the room.”

Experienced nurses tended to support novice nurses especially before the initiation of the withdrawal, but other forms of support were acknowledged following the end of the process, such as debriefing or appraisal:

“Kind of just sitting down, like debriefing with other nurses who are experienced and know what you’re going through helped a lot. Having like other nurses and staff that have experience come in and say like, ‘You did a great job, you know?’ So, just positive affirmations help.”

Knowledge on how to withdraw mechanical ventilation and provide comfort measures had developed through experience and learning from others within the ICU. Some participants had training in palliative care, but it had not taught them how to withdraw life sustaining measures in an ICU:

“I’ve learned how to make people comfortable from my colleagues here, from doing it so many times myself, from the palliative care people [here], you know, I always learn stuff from them.”

Although experiential learning was appreciated, it was also evident that WLSM and teamwork during that process should have been part of pre-licensure education, ICU orientation, or part of continuing professional development:

“I feel like education would help. Experience definitely helps but like knowing what to expect and what you’re gonna need when you’re thinking about terminally extubating or weaning...[should be taught]”

Discussion

This study identified four themes, including *Fine-tuning the Process of TWMV, Focusing on the Family, Ensuring Patient-Centered Care, and Impact on Healthcare Clinicians and Support Needs*. These identified themes provide insight and detail into the complexity of the withdrawal of mechanical ventilation within the context of EOL care in the ICU.

Literature on the WLSM in the ICU has been available for decades. However, gaps in our understanding of its complexity continue to exist. One such gap is the consistent reference to guideline use and necessity in WLSM. Findings from this study provide continued evidence of a need for clear process, and that while guidelines/protocols were seemingly available, their use was not consistent. Guidelines were seen as particularly helpful when staff were not familiar with unit processes. Recent published guidelines provide an overarching framework for major elements in WLSM to be considered.¹³ However, specific steps related to WLSM, including ventilatory support, remain somewhat ambiguous and in most cases guided by previous experiences.¹⁴ Efforts have been made to standardize practice but research to look at implementation and consistency from national and international perspectives are merited. One example includes a recent publication of the Canadian Critical Care Society and Canadian Blood Services to standardize WLSM order sets and to implement mechanisms to assess quality with regards to WLSM.¹⁵ What is also evident though, is that despite the existence of protocols, the need for care to remain context-specific and individualized persists. As such, protocols and

guidelines need to provide nuance and factor in a variety of contextual factors, for example, underlying pathology as well as family members' needs.

Findings from this study are congruent with the extant body of literature on the topic of EOL care in the ICU and WLSM in that patient- and family-centered care remain paramount. A variety of related recommendations for EOL care in the ICU have been published.¹⁶

Recommendations include involving family members in the patient's care (i.e., assessment of the patient's situation) as well as shared-decision making processes regarding decisions to withdraw or withhold life-sustaining treatment. Findings from this current study suggest that efforts to involve family members were made in several contexts across the TWMV process. Family presence was evident in meetings and care conferences, decisions regarding withdrawal processes (i.e., preference regarding endotracheal tube removal), and facilitating their presence at the bedside, among others. The involvement of family members in this way is consistent with what other researchers have suggested as facilitators of patient- and family-centered care.¹⁷ Still, literature reports that significant barriers to the provision of patient-centered care in the ICU remain.¹⁸ However, findings from our study contrast this whereby families were clearly situated within the participants' narrative accounts. Still, findings from their review are noteworthy, particularly when considering literature that reports on the efforts made by ICU clinicians to meet the needs of both patients and families members, often in an effort to promote comfort and create as positive an EOL experience as possible, despite often devastating circumstances.⁷

In previously reported literature "not being on the same page" generally refers to situations where there is incongruence between ICU clinicians and/or family members' perceptions on the direction of care. However, findings from our study indicate that there are sometimes instances whereby clinicians (i.e., RNs and RTs) may not have been on the same page

regarding how TWMV and/or extubation should occur. Helpful practices to mitigate discord include clinician team meetings that are specifically focused on actualizing a plan of care and ensuring all members of the team are involved in planning terminal weaning/extubation.¹⁶

Findings from this study support previous research that while rewarding, EOL care, and more specifically terminal weaning/extubation, is a challenging aspect of clinicians' roles in the ICU. It is important to check in with staff to see how they are coping following care for a patient undergoing terminal weaning/extubation as instances where EOL situations have "not been handled well" may eventually lead to clinician burnout.¹⁶ In light of the on-going COVID-19 global pandemic, it is important to consider the toll that death takes on clinicians.¹⁹

Strengths and Limitations

This study took place in one ICU in a large medical center. While description of the setting is provided, findings may not be transferable across ICUs. However, the study has provided useful information and a foundation for future work. Because interviews were conducted across disciplines (RNs, RTs, PAs, ACNPs, Physicians), the findings represent a broader view of the withdrawal of mechanical ventilation in this context than would have been evident from focusing on individual disciplines. However, the noticeable absence of social work and chaplaincy are acknowledged. Although they should both be engaged in the TWMV process,¹⁷ they are not a part of the consistent team in this particular unit. Additionally, when they are a part of the team, they are available for support but not involved in the actual removal of ventilatory support.

This study took place prior to the beginning of the COVID-19 pandemic. Therefore, data collected do not reflect any changes in process or experiences related to terminal weaning/extubation as a result of the pandemic. It is likely that the prevalence of weaning to

extubation has decreased due to extreme oxygen requirements (and therefore, the inability to extubate prior to death) and the desire to maintain a closed circuit to minimize COVID-19 droplets in the surrounding environment.

Future Work

The study findings support the need to determine best practices and universal guidelines for TWMV that incorporate a patient- and family-centered approach to care. Next steps include implementation of strategies within TWMV. The study team will focus on implementation outcomes such as acceptability, appropriateness, and feasibility²⁰ with the ultimate goal of positively effecting outcomes for patients, their families, and the clinicians caring for them.

Disclosure/Conflict of Interest

The authors have no conflicts of interest to report.

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Table 1. Interview Guide

1. Describe your experiences (an experience) in providing end-of-life care to a ventilated patient in the ICU.
2. Describe your experiences specific to the withdrawal of mechanical ventilation.
3. How do you typically care for patients at the end-of-life who are ventilated? (with respect to discontinuation of mechanical ventilation)
Probes – Wean to T-piece, extubate, not extubate? Do you wean the support or extubate without weaning? If you extubate, how do you go about this (walk through process step by step). Are there patients at the end of life that you would not extubate? If so, what patient characteristics would lead you to that decision? Who decides on the EOLC plan with respect to the ventilator (i.e., physician, nurse, respiratory therapist, team discussion)?
4. Describe your preference(s) regarding the process of removing ventilator support.
5. What facilitates and/or inhibits the process of withdrawing mechanical ventilation?
(Probes: teamwork, communication etc.)
6. Describe your experiences of discussing ventilator withdrawal with families (and patients if possible).
7. Are you typically comfortable/uncomfortable when there is a decision to extubate a patient as part of their EOLC? What makes you comfortable/uncomfortable?
8. Have you had a negative experience related to the removal of respiratory support? Please describe further.

Table 2. Study Participant Demographics

Variable	Frequency/Percent
Gender	
Female	15 (75%)
Male	5 (25%)
Race	
American Indian or Alaska Native	0
Asian	1 (5%)
Black or African American	0
Hispanic or Latino	1 (5%)
Native Hawaiian or Other Pacific Islander	1 (5%)
White	17 (85%)
Other	0
Health Discipline	
Registered Nurse	10 (50%)
Respiratory Therapist	1 (5%)
Acute Care Nurse Practitioner	3 (15%)
Physician Assistant	1 (5%)
Physician	
Resident	1 (5%)
Fellow	4 (20%)
Attending	0
Years of Practice in this Discipline	
Less than one year	0
1-2 years	6 (30%)
3-5 years	6 (30%)
6-10 years	5 (25%)
11-15 years	1 (5%)
16 years or greater	2 (10%)
Previous Experience with Terminal Wean/Extubation	
None	0
Personal (i.e. loss of someone close to you)	5 (25%)
Professional	
Coursework	7 (35%)
Hands-on experience	20 (100%)