Supplementary Online Content

Halpern SD, Small DS, Troxel AB, et al. Effect of default options in advance directives on hospital-free days and care choices among seriously ill patients: a randomized clinical trial. *JAMA Netw Open*. 2020;3(3):e201742. doi:10.1001/jamanetworkopen.2020.1742

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Advance Directives Tested

Standard advance directive A

Part I – Durable Healthcare Power of Attorney

I, _____ of _____ County, _____(State), appoint the person named below to be my agent to make health decisions for me **when and only when I lack sufficient capacity to make or communicate a choice regarding a healthcare decision** as verified by my attending physician. My agent may not delegate the authority to make decisions.

Appointment of Healthcare Agent ("Agent")

I appoint the following agent:

Name: _____ Relationship: _____

Address: _____

_____

Telephone Number: Home _____ Work _____

Email: _____

Alternate agent (to be contacted if the appointed agent is unable to serve):

Name: _____ Relationship: _____

Telephone Number: Home _____ Work _____

Email: _____

I understand that if I do not name an agent, my healthcare providers will ask my family or others who may know my preferences and values for help in determining my wishes for treatment.

_____*(initial)* I do not wish to appoint an agent.

Part II - Healthcare Treatment Instructions (Living Will)

The following healthcare treatment instructions exercise my right to make my own healthcare decisions. These instructions are intended to provide clear and convincing evidence of my wishes, and are to be followed only when I lack the ability to understand, make or communicate healthcare decisions for myself. Further, these wishes are only intended to apply if I am in a **state of permanent unconsciousness or have an end-stage medical condition** as verified by my attending physician.

In general, I wish to both live as long as possible and avoid pain and suffering. However, I understand that in some situations, choosing between these two goals may be necessary. If I am in a situation where such a choice is needed:

Overall Goals of Care

_____ I want my healthcare providers to treat me by helping to relieve my pain and suffering, even if that means that I may not live as long.

If you prefer to choose a different overall goal of care, cross out the lines above and place your initials by one of the other options below:

_____ I want my healthcare providers to treat me by helping me to live as long as possible, even if that means that I may have more pain or suffering.

OR

_____ I do not want to specify one of the above goals. My agent, with consultation from my healthcare provider, may direct the overall goals of my care based on his or her assessment of my preferences and values or best interests.

In addition, I want my healthcare providers and agent to focus on the following goals (optional):

_____

_____

Specific Procedures

These are my specific requests regarding life-prolonging procedures, in addition to requests I may write in at the end of this section.

1. Cardiopulmonary resuscitation (CPR)

_____ I do not want cardiopulmonary resuscitation (CPR) to be performed on me if my heart stops beating, even if performing CPR might prolong my life.

If you prefer to choose a different option, cross out the lines above and place your initials by one of the other options below:

_____ I request cardiopulmonary resuscitation (CPR) if my heart stops beating, even if performing CPR may increase my pain or suffering.

OR

_____ I do not wish to specify one of these options. My agent, with consultation from my healthcare provider, may make any decisions about cardiopulmonary resuscitation (CPR) for me based on his or her assessment of my preferences and values or best interests.

2. Mechanical ventilator (breathing machine) use

_____ I do not want to be placed on a mechanical ventilator even if it might prolong my life. If I am unable to breathe on my own, I would prefer care directed towards relief of pain and suffering.

If you prefer to choose a different option, cross out the lines above and place your initials by one of the other options below:

_____ I wish to be placed on a mechanical ventilator (breathing machine) if it may prolong my life, even if it may also increase my pain or suffering.

OR

_____ I do not wish to specify one of these options. My agent, with consultation from my healthcare provider, may make any decisions about mechanical ventilator use for me based on his or her assessment of my preferences and values or best interests.

3. Dialysis (kidney filtration by machine)

_____ I do not want dialysis to be performed on me, even if dialysis might prolong my life. If I was on dialysis before I became permanently unconscious or developed an end-stage medical condition, I want dialysis to be stopped.

If you prefer to choose a different option, cross out the lines above and place your initials by one of the other options below:

_____ I request dialysis if it may prolong my life, even if it may also increase my pain or suffering. This includes continuing dialysis if I was on it before I became permanently unconscious or developed an end-stage medical condition.

OR

_____ I do not wish to specify one of these options. My agent, with consultation from my healthcare provider, may make decisions about the use of dialysis for me based on his or her assessment of my preferences and values or best interests.

4. Feeding tube insertion for artificial nutrition and hydration

_____ I do not want to have a feeding tube inserted or used for artificial nutrition and hydration.

If you prefer to choose a different option, cross out the lines above <u>and</u> place your initials by one of the other options below:

_____ I request feeding tube insertion and use for artificial nutrition and hydration if I cannot eat or drink.

OR

_____ I do not wish to specify one of these options. I understand that if I do not clearly express my preferences, my agent will presume that I want artificial nutrition and hydration.

In addition, I make the following requests regarding whether or not to use specific therapies:

_____

_____

_____

Care on hospital discharge if I am in an end-stage medical condition

These are my requests about how I wish to be cared for if I am in a hospital, my doctors say I no longer need to be in the hospital, but I cannot communicate and my doctors do not expect that to change.

_____ I want to be sent to my home if possible, or otherwise to a facility near my home, to receive care focused on keeping me as comfortable as possible rather than on prolonging my life. If my condition worsens, I do not want to return to a hospital again.

If you prefer to choose a different option, cross out the lines above <u>and</u> place your initials by one of the other options below:

_____ I want to be sent to my home if possible, or otherwise to a facility near my home, to receive care focused on keeping me alive as long as possible. If my condition worsens, I want to return to the hospital if that may prolong my life.

OR

_____ I do not wish to specify one of these options. I understand that if I do not express my preferences, my agent, with consultation from my health care provider, will make this decision for me based on his or her assessment of my preferences and values or best interests.

Agent's Use of Instructions (Initial one option only)

_____ I want the preferences I have expressed in this Living Will to be strictly followed by my agent.

OR

_____ I want the preferences I have expressed in this Living Will to serve as a general guide for my agent. My agent will have final say about all decisions, and may override these instructions.

Please indicate any exceptions to the above – that is, instructions that may not be overridden:

_____

_____

If I did not appoint an agent, these instructions shall be followed.

Legal Protection

Pennsylvania law protects my healthcare agent and healthcare providers from any legal liability for their good faith actions in following my wishes as expressed in this form or in complying with my healthcare agent's direction. On behalf of myself, my executors and heirs, I further hold my healthcare agent and my healthcare providers harmless and indemnify them against any claim for their good faith actions in recognizing my healthcare agent's authority or in following my treatment instructions.

Having carefully read this document, I have signed it this _____ day of_____, 20__, revoking all previous healthcare powers of attorney and healthcare treatment instructions.

SIGNED: _____
(SIGN FULL NAME HERE)

Two witnesses at least 18 years of age are required by Pennsylvania law and should witness your signature in each other's presence. A person who signs this document on behalf of and at the direction of a principal may not be a witness. (It is preferable if the witnesses are not your heirs, nor your creditors, nor employed by any of your healthcare providers.)

WITNESS: _____

WITNESS: _____

Standard advance directive B

Part I – Durable Healthcare Power of Attorney

I, _____ of _____ County, _____(State), appoint the person named below to be my agent to make health decisions for me **when and only when I lack sufficient capacity to make or communicate a choice regarding a healthcare decision** as verified by my attending physician. My agent may not delegate the authority to make decisions.

Appointment of Healthcare Agent ("Agent")

I appoint the following agent:

Name: _____ Relationship: _____

Address: _____

_____

Telephone Number: Home _____ Work _____

Email: _____

Alternate agent (to be contacted if the appointed agent is unable to serve):

Name: _____ Relationship: _____

Telephone Number: Home _____ Work _____

Email: _____

I understand that if I do not name an agent, my healthcare providers will ask my family or others who may know my preferences and values for help in determining my wishes for treatment.

_____*(initial)* I do not wish to appoint an agent.

Part II - Healthcare Treatment Instructions (Living Will)

The following healthcare treatment instructions exercise my right to make my own healthcare decisions. These instructions are intended to provide clear and convincing evidence of my wishes, and are to be followed only when I lack the ability to understand, make or communicate healthcare decisions for myself. Further, these wishes are only intended to apply if I am in a **state of permanent unconsciousness or have an end-stage medical condition** as verified by my attending physician.

In general, I wish to both live as long as possible and avoid pain and suffering. However, I understand that in some situations, choosing between these two goals may be necessary. If I am in a situation where such a choice is needed:

Overall Goals of Care

_____ I want my healthcare providers to treat me by helping me to live as long as possible, even if that means that I may have more pain or suffering.

If you prefer to choose a different overall goal of care, cross out the lines above <u>and</u> place your initials by one of the other options below:

_____ I want my healthcare providers to treat me by helping to relieve my pain and suffering, even if that means that I may not live as long.

OR

_____ I do not want to specify one of the above goals. My agent, with consultation from my healthcare provider, may direct the overall goals of my care based on his or her assessment of my preferences and values or best interests.

In addition, I want my healthcare providers and agent to focus on the following goals (optional):

_____

_____

Specific Procedures

These are my specific requests regarding life-prolonging procedures, in addition to requests I may write in at the end of this section.

1. Cardiopulmonary resuscitation (CPR)

_____ I request cardiopulmonary resuscitation (CPR) if my heart stops beating, even if performing CPR may increase my pain or suffering.

If you prefer to choose a different option, cross out the lines above <u>and</u> place your initials by one of the other options below:

_____ I do not want cardiopulmonary resuscitation (CPR) to be performed on me if my heart stops beating, even if performing CPR might prolong my life.

OR

_____ I do not wish to specify one of these options. My agent, with consultation from my healthcare provider, may make any decisions about cardiopulmonary resuscitation (CPR) for me based on his or her assessment of my preferences and values or best interests.

2. Mechanical ventilator (breathing machine) use

_____ I wish to be placed on a mechanical ventilator (breathing machine) if it may prolong my life, even if it may also increase my pain or suffering.

If you prefer to choose a different option, cross out the lines above <u>and</u> place your initials by one of the other options below:

_____ I do not want to be placed on a mechanical ventilator even if it might prolong my life. If I am unable to breathe on my own, I would prefer care directed towards relief of pain and suffering.

OR

_____ I do not wish to specify one of these options. My agent, with consultation from my healthcare provider, may make any decisions about mechanical ventilator use for me based on his or her assessment of my preferences and values or best interests.

3. Dialysis (kidney filtration by machine)

_____ I request dialysis if it may prolong my life, even if it may also increase my pain or suffering. This includes continuing dialysis if I was on it before I became permanently unconscious or developed an end-stage medical condition.

If you prefer to choose a different option, cross out the lines above <u>and</u> place your initials by one of the other options below:

_____ I do not want dialysis to be performed on me, even if dialysis might prolong my life. If I was on dialysis before I became permanently unconscious or developed an end-stage medical condition, I want dialysis to be stopped.

OR

_____ I do not wish to specify one of these options. My agent, with consultation from my healthcare provider, may make decisions about the use of dialysis for me based on his or her assessment of my preferences and values or best interests.

4. Feeding tube insertion for artificial nutrition and hydration

_____ I request feeding tube insertion and use for artificial nutrition and hydration if I cannot eat or drink

If you prefer to choose a different option, cross out the lines above <u>and</u> place your initials by one of the other options below:

_____ I do not want to have a feeding tube inserted or used for artificial nutrition and hydration.

OR

_____ I do not wish to specify one of these options. I understand that if I do not clearly express my preferences, my agent will presume that I want artificial nutrition and hydration.

In addition, I make the following requests regarding whether or not to use specific therapies:

_____

_____

_____

Care on hospital discharge if I am in an end-stage medical condition

These are my requests about how I wish to be cared for if I am in a hospital, my doctors say I no longer need to be in the hospital, but I cannot communicate and my doctors do not expect that to change.

_____ I want to be sent to my home if possible, or otherwise to a facility near my home, to receive care focused on keeping me alive as long as possible. If my condition worsens, I want to return to the hospital if that may prolong my life.

If you prefer to choose a different option, cross out the lines above <u>and</u> place your initials by one of the other options below:

_____ I want to be sent to my home if possible, or otherwise to a facility near my home, to receive care focused on keeping me as comfortable as possible rather than on prolonging my life. If my condition worsens, I do not want to return to a hospital again.

OR

_____ I do not wish to specify one of these options. I understand that if I do not express my preferences, my agent, with consultation from my health care provider, will make this decision for me based on his or her assessment of my preferences and values or best interests.

Agent's Use of Instructions (Initial one option only)

_____ I want the preferences I have expressed in this Living Will to be strictly followed by my agent.

OR

_____ I want the preferences I have expressed in this Living Will to serve as a general guide for my agent. My agent will have final say about all decisions, and may override these instructions.

Please indicate any exceptions to the above – that is, instructions that may not be overridden:

_____

_____

If I did not appoint an agent, these instructions shall be followed.

Legal Protection

Pennsylvania law protects my healthcare agent and healthcare providers from any legal liability for their good faith actions in following my wishes as expressed in this form or in complying with my healthcare agent's direction. On behalf of myself, my executors and heirs, I further hold my healthcare agent and my healthcare providers harmless and indemnify them against any claim for their good faith actions in recognizing my healthcare agent's authority or in following my treatment instructions.

Having carefully read this document, I have signed it this _____ day of_____, 20__, revoking all previous healthcare powers of attorney and healthcare treatment instructions.

SIGNED: _____
(SIGN FULL NAME HERE)

Two witnesses at least 18 years of age are required by Pennsylvania law and should witness your signature in each other's presence. A person who signs this document on behalf of and at the direction of a principal may not be a witness. (It is preferable if the witnesses are not your heirs, nor your creditors, nor employed by any of your healthcare providers.)

WITNESS: _____

WITNESS: _____

Comfort default advance directive

Part I – Durable Healthcare Power of Attorney

I, _____ of _____ County, _____(State), appoint the person named below to be my agent to make health decisions for me **when and only when I lack sufficient capacity to make or communicate a choice regarding a healthcare decision** as verified by my attending physician. My agent may not delegate the authority to make decisions.

Appointment of Healthcare Agent ("Agent")

I appoint the following agent:

Name: _____ Relationship: _____

Address: _____

_____

Telephone Number: Home _____ Work _____

Email: _____

Alternate agent (to be contacted if the appointed agent is unable to serve):

Name: _____ Relationship: _____

Telephone Number: Home _____ Work _____

Email: _____

I understand that if I do not name an agent, my healthcare providers will ask my family or others who may know my preferences and values for help in determining my wishes for treatment.

_____*(initial)* I do not wish to appoint an agent.

Part II - Healthcare Treatment Instructions (Living Will)

The following healthcare treatment instructions exercise my right to make my own healthcare decisions. These instructions are intended to provide clear and convincing evidence of my wishes, and are to be followed only when I lack the ability to understand, make or communicate healthcare decisions for myself. Further, these wishes are only intended to apply if I am in a **state of permanent unconsciousness or have an end-stage medical condition** as verified by my attending physician.

In general, I wish to both live as long as possible and avoid pain and suffering. However, I understand that in some situations, choosing between these two goals may be necessary. If I am in a situation where such a choice is needed:

Overall Goals of Care

__X__ I want my healthcare providers to treat me by helping to relieve my pain and suffering, even if that means that I may not live as long.

If you prefer to choose a different overall goal of care, cross out the lines above and place your initials by one of the other options below:

_____ I want my healthcare providers to treat me by helping me to live as long as possible, even if that means that I may have more pain or suffering.

OR

_____ I do not want to specify one of the above goals. My agent, with consultation from my healthcare provider, may direct the overall goals of my care based on his or her assessment of my preferences and values or best interests.

In addition, I want my healthcare providers and agent to focus on the following goals (optional):

_____

_____

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These are my specific requests regarding life-prolonging procedures, in addition to requests I may write in at the end of this section.

1. Cardiopulmonary resuscitation (CPR)

__X__ I do not want cardiopulmonary resuscitation (CPR) to be performed on me if my heart stops beating, even if performing CPR might prolong my life.

If you prefer to choose a different option, cross out the lines above and place your initials by one of the other options below:

_____ I request cardiopulmonary resuscitation (CPR) if my heart stops beating, even if performing CPR may increase my pain or suffering.

OR

_____ I do not wish to specify one of these options. My agent, with consultation from my healthcare provider, may make any decisions about cardiopulmonary resuscitation (CPR) for me based on his or her assessment of my preferences and values or best interests.

2. Mechanical ventilator (breathing machine) use

__X__ I do not want to be placed on a mechanical ventilator even if it might prolong my life. If I am unable to breathe on my own, I would prefer care directed towards relief of pain and suffering.

If you prefer to choose a different option, cross out the lines above and place your initials by one of the other options below:

_____ I wish to be placed on a mechanical ventilator (breathing machine) if it may prolong my life, even if it may also increase my pain or suffering.

OR

_____ I do not wish to specify one of these options. My agent, with consultation from my healthcare provider, may make any decisions about mechanical ventilator use for me based on his or her assessment of my preferences and values or best interests.

3. Dialysis (kidney filtration by machine)

__X__ I do not want dialysis to be performed on me, even if dialysis might prolong my life. If I was on dialysis before I became permanently unconscious or developed an end-stage medical condition, I want dialysis to be stopped.

If you prefer to choose a different option, cross out the lines above and place your initials by one of the other options below:

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OR

_____ I do not wish to specify one of these options. My agent, with consultation from my healthcare provider, may make decisions about the use of dialysis for me based on his or her assessment of my preferences and values or best interests.

4. Feeding tube insertion for artificial nutrition and hydration

__X__ I do not want to have a feeding tube inserted or used for artificial nutrition and hydration.

If you prefer to choose a different option, cross out the lines above and place your initials by one of the other options below:

_____ I request feeding tube insertion and use for artificial nutrition and hydration if I cannot eat or drink.

OR

_____ I do not wish to specify one of these options. I understand that if I do not clearly express my preferences, my agent will presume that I want artificial nutrition and hydration.

In addition, I make the following requests regarding whether or not to use specific therapies:

_____

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Care on hospital discharge if I am in an end-stage medical condition

These are my requests about how I wish to be cared for if I am in a hospital, my doctors say I no longer need to be in the hospital, but I cannot communicate and my doctors do not expect that to change.

__X__ I want to be sent to my home if possible, or otherwise to a facility near my home, to receive care focused on keeping me as comfortable as possible rather than on prolonging my life. If my condition worsens, I do not want to return to a hospital again.

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Agent's Use of Instructions (Initial one option only)

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Legal Protection

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Having carefully read this document, I have signed it this _____ day of_____, 20__, revoking all previous healthcare powers of attorney and healthcare treatment instructions.

SIGNED: _____
(SIGN FULL NAME HERE)

Two witnesses at least 18 years of age are required by Pennsylvania law and should witness your signature in each other's presence. A person who signs this document on behalf of and at the direction of a principal may not be a witness. (It is preferable if the witnesses are not your heirs, nor your creditors, nor employed by any of your healthcare providers.)

WITNESS: _____

WITNESS: _____

Life extending default advance directive

Part I – Durable Healthcare Power of Attorney

I, _____ of _____ County, _____(State), appoint the person named below to be my agent to make health decisions for me **when and only when I lack sufficient capacity to make or communicate a choice regarding a healthcare decision** as verified by my attending physician. My agent may not delegate the authority to make decisions.

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Name: _____ Relationship: _____

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Telephone Number: Home _____ Work _____

Email: _____

Alternate agent (to be contacted if the appointed agent is unable to serve):

Name: _____ Relationship: _____

Telephone Number: Home _____ Work _____

Email: _____

I understand that if I do not name an agent, my healthcare providers will ask my family or others who may know my preferences and values for help in determining my wishes for treatment.

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__X__ I wish to be placed on a mechanical ventilator (breathing machine) if it may prolong my life, even if it may also increase my pain or suffering.

If you prefer to choose a different option, cross out the lines above <u>and</u> place your initials by one of the other options below:

_____ I do not want to be placed on a mechanical ventilator even if it might prolong my life. If I am unable to breathe on my own, I would prefer care directed towards relief of pain and suffering.

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__X__ I request feeding tube insertion and use for artificial nutrition and hydration if I cannot eat or drink

If you prefer to choose a different option, cross out the lines above <u>and</u> place your initials by one of the other options below:

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These are my requests about how I wish to be cared for if I am in a hospital, my doctors say I no longer need to be in the hospital, but I cannot communicate and my doctors do not expect that to change.

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If you prefer to choose a different option, cross out the lines above <u>and</u> place your initials by one of the other options below:

_____ I want to be sent to my home if possible, or otherwise to a facility near my home, to receive care focused on keeping me as comfortable as possible rather than on prolonging my life. If my condition worsens, I do not want to return to a hospital again.

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Agent's Use of Instructions (Initial one option only)

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OR

_____ I want the preferences I have expressed in this Living Will to serve as a general guide for my agent. My agent will have final say about all decisions, and may override these instructions.

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Having carefully read this document, I have signed it this _____ day of_____, 20__, revoking all previous healthcare powers of attorney and healthcare treatment instructions.

SIGNED: _____
(SIGN FULL NAME HERE)

Two witnesses at least 18 years of age are required by Pennsylvania law and should witness your signature in each other's presence. A person who signs this document on behalf of and at the direction of a principal may not be a witness. (It is preferable if the witnesses are not your heirs, nor your creditors, nor employed by any of your healthcare providers.)

WITNESS: _____

WITNESS: _____

eTable 1. Differences Among the 3 Versions of the Advance Directive

	Standard AD	Comfort-default AD	Life-extension default AD
Overall goal of care	• Overall care focused on comfort and overall care focused on life extension presented in random order, followed by preference not to choose • No option is preselected	• Overall care focused on comfort presented first and preselected • Overall care focused on life extension and then preference not to choose presented next • Patient instructed to cross out preselected option and initial one of the other options if they prefer	• Overall care focused on life extension presented first and preselected • Overall care focused on comfort and then preference not to choose presented next • Patient instructed to cross out preselected option and initial one of the other options if they prefer
Choices regarding CPR, mechanical ventilation, feeding tube, and dialysis	• Choices to receive and forgo each of 4 life-support interventions* presented in random order, followed by preference not to choose • No options are preselected	• Choices to forgo each of 4 life-support interventions presented first and preselected • Choices to receive each of 4 life-support interventions presented next • Patient instructed to cross out preselected option and initial one of the other options if they prefer	• Choices to receive each of 4 life-support interventions presented first and preselected • Choices to forgo each of 4 life-support interventions presented next • Patient instructed to cross out preselected option and initial one of the other options if they prefer

eTable 2. Comparison of Patients Who Were and Were Not in the Per-Protocol Sample

	Per-protocol (n=264)	Not in per-protocol (n=228)	p-value
Age (mean (SD))	62.45 (10.87)	62.21 (11.13)	0.810
Gender (%)			0.489
Male	154 (58.3)	125 (54.8)	
Female	110 (41.7)	103 (45.2)	
Race (%)			0.297
White or Caucasian	193 (73.1)	154 (67.5)	
Black or African American	62 (23.5)	60 (26.3)	
Other	8 (3.0)	12 (5.3)	
Missing/Unknown	1 (0.4)	2 (0.9)	
Ethnicity (%)			1
Not Hispanic/ Latino	229 (86.7)	198 (86.8)	
Hispanic/ Latino	4 (1.5)	4 (1.8)	
Missing/ Unknown	31 (11.7)	26 (11.4)	
Marital status (%)			0.535
Currently Married or Living with Partner	177 (67.0)	138 (60.5)	
Divorced/Separated	35 (13.3)	38 (16.7)	
Never married	34 (12.9)	34 (14.9)	
Widowed or Widower	16 (6.1)	15 (6.6)	
Missing	2 (0.8)	3 (1.3)	
Education (%)			0.968
Less than high school	14 (5.3)	11 (4.8)	
High school/ GED	80 (30.3)	70 (30.7)	
Some college	66 (25.0)	51 (22.4)	
College degree	60 (22.7)	55 (24.1)	
Post-college degree	41 (15.5)	37 (16.2)	
Missing	3 (1.1)	4 (1.8)	
Income (%)			0.747
Less than $30,000	65 (24.6)	63 (27.6)	
$30,000-$69,999	99 (37.5)	75 (32.9)	
$70,000-$99,999	39 (14.8)	32 (14.0)	
$100,000 and over	54 (20.5)	42 (18.4)	
Missing	7 (2.7)	16 (7.0)	
Religion (%)			0.175
Catholic	104 (39.4)	68 (29.8)	
Protestant	91 (34.5)	84 (36.8)	
Other Christian	25 (9.5)	23 (10.1)	
Jewish	8 (3.0)	11 (4.8)	
Other faiths	5 (1.9)	11 (4.8)	
Unaffiliated	24 (9.1)	21 (9.2)	

eTable 2. Comparison of Patients Who Were and Were Not in the Per-Protocol Sample (continued)

	Per-protocol (n=264)	Not in per-protocol (n=228)	p-value
Missing	7 (2.7)	10 (4.4)	
Diagnosis (%)			0.657
Cancer	191 (72.3)	172 (75.4)	
COPD and other incurable lung disease	26 (9.8)	19 (8.3)	
End-stage renal disease	16 (6.1)	18 (7.9)	
Congestive heart failure	7 (2.7)	4 (1.8)	
Amyotrophic Lateral Sclerosis	24 (9.1)	15 (6.6)	
AD Group (%)			0.618
Comfort	85 (32.2)	83 (36.4)	
Standard	91 (34.5)	74 (32.5)	
Life Extending	88 (33.3)	71 (31.1)	

eTable 3. Changes to Choices for Goals of Care and for Life Support at Debriefing and During Follow-up

Changed at debrief (n=264)[a]	**Comfort AD (n=85)**		**Standard AD (n=91)**		**Life Extending AD (n=88)**		
	More Aggressive	Less Aggressive	More Aggressive	Less Aggressive	More Aggressive	Less Aggressive	Total
Goal of care	1	0	0	0	0	0	1
CPR	2	1	0	0	0	0	3
Mechanical ventilation	4	1	2	0	1	0	8
Dialysis	3	1	2	1	0	1	8
Feeding tube	3	1	1	2	2	1	10
Changed at later follow-up (n=240)	**Comfort AD (n=78)**		**Standard AD (n=82)**		**Life Extending AD (n=80)**		
	More Aggressive	Less Aggressive	More Aggressive	Less Aggressive	More Aggressive	Less Aggressive	Total
Goal of care	0	0	0	1	0	1	2
CPR	3	0	0	1	0	1	5
Mechanical ventilation	0	0	2	2	0	1	5
Dialysis	2	0	1	2	0	0	5
Feeding tube	0	0	0	2	0	4	6

[a] 264 patients were debriefed

For goal of care, changes to more aggressive care include from comfort-oriented goal to not specifying or life-extension goal, or from not specifying to life-extension goal. Changes to less aggressive care include from life-extension goal to either not specifying or comfort-oriented goal, or from not specifying to comfort-oriented goal.

For the four forms of life support, changes to more aggressive care include from forgoing to not specifying or to receiving, or from not specifying to receiving. Changes to less aggressive care include from receiving to either not specifying or forgoing, or from not specifying to forgoing.

eTable 4. Comparison of Patients Who Did and Did Mot Provide Valid Social Security Numbers

	Valid SSN (n=437)	No valid SSN (n=55)	p-value
Age (mean (SD))	62.34 (10.64)	62.40 (13.48)	0.968
Gender (%)			0.842
Male	249 (57.0)	30 (54.5)	
Female	188 (43.0)	25 (45.5)	
Race (%)			0.109
White or Caucasian	309 (70.7)	38 (69.1)	
Black or African American	111 (25.4)	11 (20.0)	
Other	15 (3.4)	5 (9.1)	
Missing/Unknown	2 (0.5)	1 (1.8)	
Ethnicity (%)			0.651
Not Hispanic or Latino	378 (86.5)	49 (89.1)	
Hispanic/ Latino	8 (1.8)	0 (0.0)	
Missing / Unknown	51 (11.7)	6 (10.9)	
Marital status (%)			0.981
Currently Married or Living with Partner	280 (64.1)	35 (63.6)	
Divorced/Separated	66 (15.1)	7 (12.7)	
Never married	60 (13.7)	8 (14.5)	
Widowed or Widower	28 (6.4)	3 (5.5)	
Missing	3 (0.7)	2 (3.6)	
Education (%)			0.016
Less than high school	24 (5.5)	1 (1.8)	
High school/ GED	137 (31.4)	13 (23.6)	
Some college	109 (24.9)	8 (14.5)	
College degree	101 (23.1)	14 (25.5)	
Post-college degree	61 (14.0)	17 (30.9)	
Missing	5 (1.1)	2 (3.6)	
Income (%)			0.003
Less than 30000	119 (27.2)	9 (16.4)	
30000-69999	157 (35.9)	17 (30.9)	
70000-99999	65 (14.9)	6 (10.9)	
100000 and over	75 (17.2)	21 (38.2)	
Missing	21 (4.8)	2 (3.6)	
Religion (%)			0.037
Catholic	152 (34.8)	20 (36.4)	
Protestant	163 (37.3)	12 (21.8)	
Other Christian	44 (10.1)	4 (7.3)	
Jewish	14 (3.2)	5 (9.1)	
Other faiths	13 (3.0)	3 (5.5)	
Unaffiliated	37 (8.5)	8 (14.5)	

eTable 4. Comparison of Patients Who Did and Did Mot Provide Valid Social Security Numbers (continued)

	Valid SSN (n=437)	**No valid SSN (n=55)**	**p-value**
Missing	14 (3.2)	3 (5.5)	
Diagnosis (%)			0.285
Gastro-Intestinal cancer	141 (32.3)	20 (36.4)	
Genitourinary cancer	81 (18.5)	11 (20.0)	
Lung cancer	70 (16.0)	10 (18.1)	
Breast cancer	27 (6.2)	3 (5.5)	
COPD and other incurable lung disease	44 (10.1)	1 (1.8)	
End-stage renal disease	28 (6.4)	6 (10.9)	
Congestive heart failure	9 (2.1)	2 (3.6)	
Amyotrophic Lateral Sclerosis	37 (8.5)	2 (3.6)	
AD Groups (%)			0.760
Comfort AD	148 (33.9)	20 (36.4)	
Standard AD	149 (34.1)	16 (29.1)	
Life Extending AD	140 (32.0)	19 (34.5)	

eTable 5. Regression Analysis of Hospital-Free Days, Measured Outcomes Only[a]

Variables	Incident rate ratio (95% CI)	p-value
Standard AD	reference	
Standard AD:Comfort AD	1.05 (0.90-1.23)	0.511
Standard AD:Life Extending AD	1.03 (0.88-1.20)	0.716
Age	1 (0.99-1.01)	0.922
Gender (Female)	1.04 (0.92-1.18)	0.543
Race (Black)	1 (0.86-1.16)	0.984
Diagnosis (Not cancer)	1.09 (0.94-1.26)	0.252
[a] N = 437; Negative Binomial output with offset as eligible follow-up		

Non-inferiority tests:
H0: Comfort/Standard <= 0.85
H1: Comfort/Standard > 0.85
CI: (0.90, infinite), p value = <0.001
From the CI we can see that the lower bound of CI is 0.90 (which is greater than 0.85), which means we can reject the null hypothesis. This is also evident from the p-value.

H0: Life Extending/ Standard <= 0.85
H1: Life Extending/Standard > 0.85
CI: (0.88, infinite), p value = <0.001
From the CI we can see that the lower bound of CI is 0.88 (which is greater than 0.85), which means we can reject the null hypothesis. This too is evident from the p-value.

*Bonferroni correction has been applied to the non-inferiority tests

eTable 6. Regression Analysis of Hospital-Free Days, Missing Outcomes Imputed[a,b]

Variables	Incident rate ratio (95% CI)	p-value
Standard AD	reference	
Standard AD:Comfort AD	1.05 (0.91-1.22)	0.521
Standard AD:Life Extending AD	1.03 (0.89-1.20)	0.652
Age	1 (0.99-1.01)	0.901
Gender (Female)	1.04 (0.92-1.18)	0.497
Race (Black)	1.01 (0.88-1.16)	0.903
Diagnosis (Not cancer)	1.09 (0.95-1.25)	0.227
[a] N=492; Negative Binomial output (imputed data)		
[b] Missing values imputed via model based multiple imputation approach, which uses chain of regression models. Implemented with R package 'mice'		

eTable 7. Complier Average Treatment Effect Analysis of Hospital-Free Days[a]

Comparison of Efficacy	**Absolute difference in HFD (95% CI)[b]**
Comfort goal vs. non-comfort goal AD for those who would accept comfort goals	272.67 (-482.2 , 3217.3)
[a] Estimated proportion of compliers = 9.86%	
[b] 95% CI built using conditional likelihood test which is robust for weak IVs	

eTable 8. Regression Analysis of Receipt of at Least 1 Form of Life Support[a]

Variables	Odds ratio (95% CI)	p-value
Comfort AD	0.64 (0.3-1.33)	0.235
Life Extending AD	0.72 (0.34-1.51)	0.388
Age	0.99 (0.96-1.02)	0.588
Gender (Female)	0.49 (0.25-0.93)	0.033
Race (Black)	3.76 (2.01-7.08)	0.000
Diagnosis (Not cancer)	2.05 (1.08-3.86)	0.026

[a] Logistic regression output; Standard AD = reference

eTable 9. Regression Analysis of Death in a Hospital vs Death Elsewhere or Alive[a]

Variables	Odds ratio (95% CI)	p-value
Comfort AD	0.93 (0.87-1)	0.066
Life Extending AD	0.95 (0.88-1.02)	0.154
Age	1 (1-1)	0.831
Race (Black)	1.03 (0.96-1.1)	0.479
Diagnosis (Not cancer)	1.02 (0.95-1.09)	0.646

[a] Logistic model output; Standard AD = reference

eTable 10. Distributions of Patients Whose Completed ADs Were Scanned in the Electronic Health Record

AD versions	mITT sample (n=492)	Patients who completed ADs and were debriefed (n=264)	Patients who completed ADs, were debriefed, and had valid social security numbers
Comfort AD	37.5 (63/168)	72.9 (62/85)	35.7 (60/168)
Standard AD	39.4 (65/165)	70.3 (64/91)	36.4 (60/165)
Life extending AD	37.7 (60/159)	68.2 (60/88)	37.1 (59/159)
P value	0.928	0.790	0.987

eTable 11. Choices and Outcomes Among Patients in the Per-Protocol Sample (n = 179)

	Treatment Arm						
	Comfort AD (n=60)			**Standard AD** (n=60) (Reference)	**Life-extending AD** (n=59)		
Outcomes	*Summary*	*Adjusted effect estimate (95% CI)*	*Adjusted p-value*	*Summary*	*Summary*	*Adjusted effect estimate (95% CI)*	*Adjusted p-value*
Comfort-oriented goal	68.3%	Odds ratio= 2.41 (1.12, 5.23)	0.025	48.3%	27.1%	0.40 (0.18, 0.89)	0.024
Hospital-free days	Median (IQR) = 644 (360.2 - 880.8)	Incident rate = 1.19 (0.99, 1.42)	0.055	517 (322 - 667.5)	Median (IQR) = 614 (372.5 - 824.5)	1.15 (0.96, 1.37)	0.132
Number of hospital days	Median (IQR) = 3 (0 - 13)	Incident rate = 1.14 (0.58, 2.24)	0.704	7 (0 - 18)	Median (IQR) = 3 (0 - 8.5)	0.68 (0.34, 1.34)	0.263
Receipt of any life-sustaining therapies	10.0%	Odds ratio = 0.72 (0.19, 2.69)	0.630	11.7%	1.7%	0.12 (0.13, 1.08)	0.059

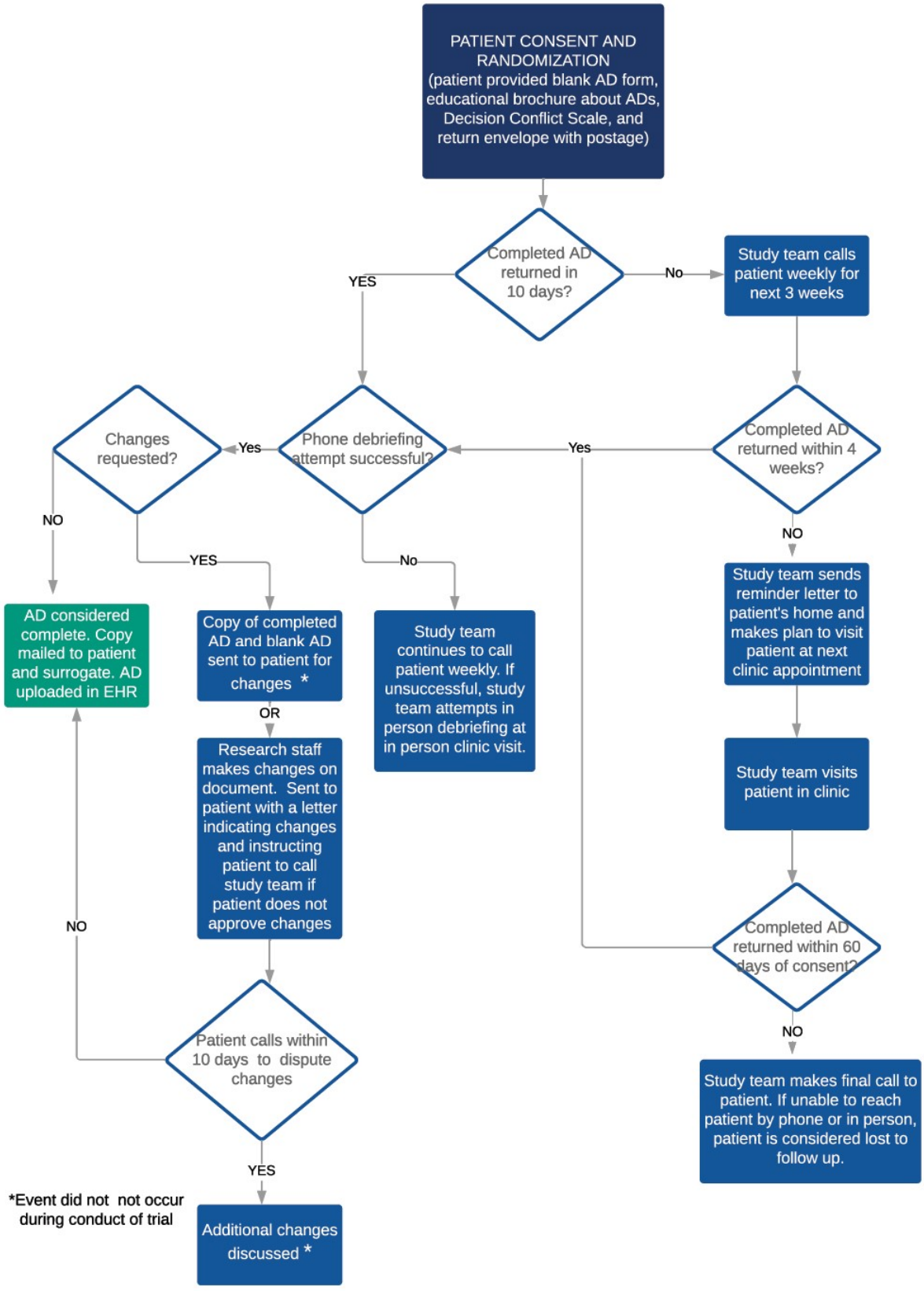
eTable 12. Regression Analysis of McGill Quality of Life Score[a,b]

Variables	Estimate (95% CI)	p value
Comfort AD	0.11 (-0.85 - 1.07)	0.823
Life Extending AD	-0.04 (-0.99 - 0.92)	0.937
Age	0.03 (-0.01 - 0.06)	0.155
Gender (Female)	0.22 (-0.60 - 1.04)	0.604
Race (Black)	0.29 (-0.78 - 1.36)	0.595
Education (College degree)	0.26 (-0.57 - 1.09)	0.227
Marital status (Not currently married)	-0.60 (-1.6 - 0.38)	0.736
Diagnosis (Not cancer)	0.16 (-0.77 - 1.1)	0.539

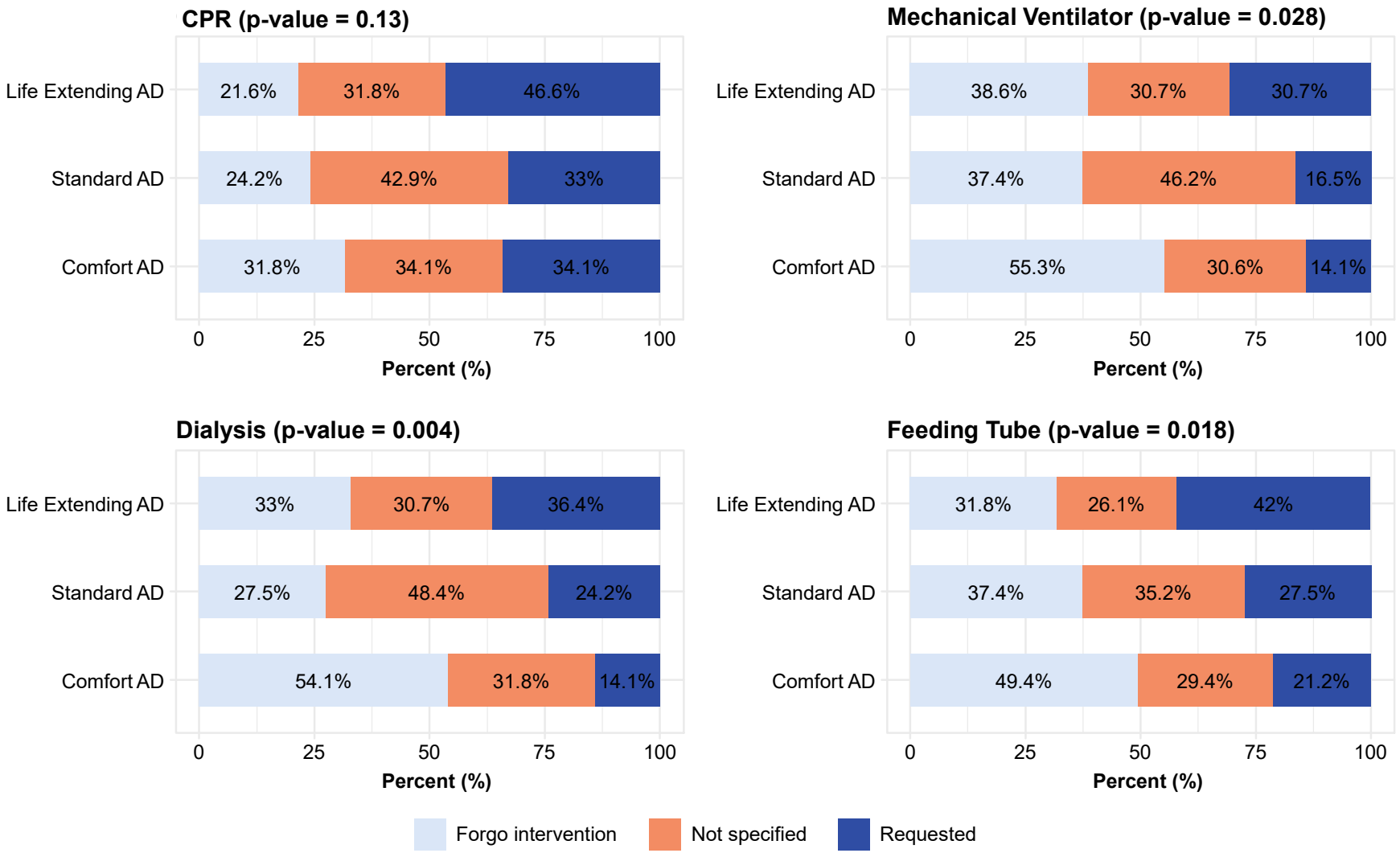
[a] N = 264 patients completing ADs; Ordinary Least Squares regression output; Standard AD = reference

[b] Scores range from 0 to 10 and were reported for 247 patients and imputed for 17 patients

eFigure 1. Flow of Patient Accrual and Protocol Completion



eFigure 2. Proportions of Patients Choosing to Forgo Each Form of Life Support by Trial Group, Per-Protocol Sample



eFigure 3. Proportions of Patients Choosing to Forgo Each Form of Life Support by Trial Group, Modified Intention-to-Treat Sample