

Supplementary Online Content

Becker C, Lecheler L, Hochstrasser S, et al. Association of communication interventions to discuss code status with patient decisions for do-not-resuscitate orders: a systematic review and meta-analysis. *JAMA Netw Open*. 2019;2(6):e195033.
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eTable 1. Search Strategy for PubMed

eTable 2. Risk Assessment by Cochrane Risk of Bias Tool

eReferences.

eFigure. Flow of Studies Through the Review Process

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

eTable 1. Search Strategy for PubMed

Search date from inception to 19 November 2018; Hits: 2805

(resuscitation[mh] OR resuscitat*[tiab] OR do-not-resuscitate[tiab] OR CPR[tiab] OR Code Blue[tiab] OR code status[tiab] OR (Life[tiab] AND Prolong*[tiab]) OR cardiopulmonary arrest[tiab] OR heart massage[tiab] OR cardiac massage[tiab])
AND
(decision making[tiab] OR Decision Making[mh] OR decision aid[tiab] OR decision support[tiab] OR "Decision Support Systems, Clinical"[mh] OR decision support[tiab] OR communicat*[tiab] OR conversation[tiab] OR dicuss*[tiab] OR dialogue[tiab] OR educat*[tiab] OR "Patient Education Handout" [Publication Type] OR "Patient Education as Topic"[Mesh:noexp] OR "Health Communication"[mh] OR intervention[tiab] OR interventions[tiab])
AND
(randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized[tiab] OR placebo[tiab] OR "clinical trials as topic"[MeSH Terms:noexp] OR randomly[tiab] OR trial[ti] NOT ("animals"[MeSH Terms] NOT "humans"[MeSH Terms]))

Search results for other Databases

EMBASE via EMBASE (search date from inception to 19 November 2018); Hits: 3206

PsycINFO via PsycINFO (search date from inception to 19 November 2018); Hits: 835

CINAHL via CINAHL (search date from inception to 19 November 2018); Hits; 155

eTable 2. Risk Assessment by Cochrane Risk of Bias Tool

Green colour denotes low risk of bias, red colour denotes high risk of bias, yellow colour denotes unclear risk of bias.

AUTHOR / YEAR	STUDY NAME	RANDOM SEQUENCE GENERATION	ALLOCATION CONCEALMENT	SELECTIVE REPORTING	OTHER BIAS	BLINDING OF PARTICIPANTS AND PERSONNEL	BLINDING OF OUTCOME ASSESSMENT	INCOMPLETE OUTCOME DATA	RISK OF BIAS
Nicolasora, Nelson et al 2006 ¹	If Asked, Hospitalized Patients Will Choose Whether to Receive Life-Sustaining Therapies	Usage of random number generator	Usage/method of concealment not described	Insufficient information to permit judgement	Control group was not approached by study team	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	No missing outcome data	HIGH
Stein, Rhea A. et al 2013 ²	Randomized Controlled Trial of a Structured Intervention to Facilitate End-of-Life Decision Making in Patients With Advanced Cancer	Usage of computer randomization scheme	Randomization was concealed	Insufficient information to permit judgement	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	Reasons for missing outcome data unlikely to be related to true outcome / Missing outcome data balanced across groups / Missing data appropriately imputed	LOW
El-Jawahri, Areej et al 2010 ³	Use of Video to Facilitate End-of-Life Discussions With Patients With Cancer: A Randomized Controlled Trial	Usage of computer randomization scheme	Usage of envelopes for concealment described but unknown if sequentially numbered, opaque and sealed	Insufficient information to permit judgement	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	No missing outcome data	UNCLEAR
Volandes, Angelo E. et al 2012 ⁴	Randomized Controlled Trial of a Video Decision Support Tool for Cardiopulmonary	Usage of computer randomization scheme	Usage of envelopes for concealment described but unknown if	Study protocol available, pre-specified outcomes	Study seems to be free of other	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be	Reasons for missing outcome data unlikely to be related to true	LOW

	Resuscitation Decision Making in Advanced Cancer		sequentially numbered, opaque and sealed	reported (NCT01241929)	sources of bias		influenced by lack of blinding	outcome / Missing outcome data balanced across groups	
El-Jawahri, Areej et al 2015⁵	A Randomized Controlled Trial of a CPR and Intubation Video Decision Support Tool for Hospitalized Patients	Usage of computer randomization scheme	Randomization was concealed with numbered envelopes	Study protocol available , pre-specified primary and secondary outcomes relevant to review reported (NCT01325519)	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	No missing outcome data (Prim.EP), no information if missing data of sec. EP but unlikely to be related to true outcome	LOW
Mittal, Kriti et al 2014⁶	Use of a standardized code status explanation by residents among hospitalized patients	Insufficient information about the sequence generation process to permit judgement	Usage/method of concealment not described	Insufficient information to permit judgement	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	Reasons for missing outcome data unlikely to be related to true outcome / Missing outcome data balanced across groups	HIGH
Rhondali, Wadih et al 2013⁷	Patient-Physician Communication About Code Status Preferences	Usage of computer randomization scheme	Method of concealment not described	Insufficient information to permit judgement	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	Reasons for missing outcome data unlikely to be related to true outcome	UNCLEAR
Merino, Aimee M. et al 2017⁸	A Randomized Controlled Trial of a CPR Decision Support Video for Patients Admitted to the General Medicine Service	Usage of random number generator	Usage/method of concealment not described	Insufficient information to permit judgement	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	Reasons for missing outcome data unlikely to be related to true outcome	UNCLEAR
Wilson, ME et al 2015⁹	A video to improve patient and surrogate understanding of cardiopulmonary resuscitation	Usage of random number generator	Randomization was concealed before assessment with sequentially numbered	Study protocol available , pre-specified primary outcomes reported	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	Reasons for missing outcome data unlikely to be related to true outcome	LOW

	choices in the ICU: a randomized controlled trial		opaque sealed envelopes	(NCT10-003628)				/ Missing outcome data balanced across groups	
Richardson-Royer, C et al 2018 ¹⁰	A video depicting resuscitation did not impact upon patients' decision making	Method of randomization not described	Usage/method of concealment not described	Study protocol available, relevant pre-specified primary outcomes reported (NCT01878968)	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	No missing outcome data	UNCLEAR
Epstein, Andrew S 2013 ¹¹	A Randomized Controlled Trial of a Cardiopulmonary Resuscitation Video in Advance Care Planning for Progressive Pancreas and Hepatobiliary Cancer Patients	Usage of permuted block randomization	Usage/method of concealment not described	Insufficient information to permit judgement	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	Reasons for missing outcome data unlikely to be related to true outcome / Missing outcome data balanced across groups	UNCLEAR
Volandes, Angelo E. 2012 ¹²	A Randomized Controlled Trial of a Goals-of-Care Video for Elderly Patients Admitted to Skilled Nursing Facilities	Usage of computer randomization scheme	Usage of envelopes for concealment described but unknown if sequentially numbered, opaque and sealed	Study protocol available, relevant pre-specified primary outcome reported (NCT01233973)	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	Reasons for missing outcome data unlikely to be related to true outcome / Missing outcome data balanced across groups	LOW
El-Jawahri, Areej et al 2016 ¹³	A Randomized Controlled Trial of an Advance Care Planning Video Decision Support Tool for Patients with Advanced Heart Failure	Usage of computer randomization scheme	Usage of envelopes for concealment described but unknown if sequentially numbered, opaque and sealed	Study protocol available, pre-specified outcomes reported (NCT01589120)	Study seems to be free of other sources of bias	Outcome is not likely to be influenced by lack of blinding	Outcome measurement is not likely to be influenced by lack of blinding	Reasons for missing outcome data unlikely to be related to true outcome / Missing outcome data balanced across groups	LOW

<p>Yamada, Ryo et al 1999¹⁴</p>	<p>A Multimedia Intervention on Cardiopulmonary Resuscitation and Advance Directives</p>	<p>Randomization based on clinic half-day and the week of the month</p>	<p>Usage/method of concealment not described</p>	<p>Insufficient information to permit judgement</p>	<p>Study seems to be free of other sources of bias</p>	<p>Outcome is not likely to be influenced by lack of blinding</p>	<p>Outcome measurement is not likely to be influenced by lack of blinding</p>	<p>Insufficient reporting of missing data</p>	<p>HIGH</p>
<p>Kirchhoff et al 2012¹⁵</p>	<p>Impact of a Disease-Specific Advance Care Planning Intervention on End-of-life Care</p>	<p>Method of randomization not described</p>	<p>Usage of sealed-envelope method for concealment described but unknown if sequentially numbered and opaque</p>	<p>Insufficient information to permit judgement</p>	<p>Surrogates involved in intervention; Relevant outcome only for deceased patients way of assessment of outcome unclear</p>	<p>Outcome is not likely to be influenced by lack of blinding</p>	<p>Outcome measurement is not likely to be influenced by lack of blinding</p>	<p>No missing outcome data</p>	<p>HIGH</p>

References

1. Nicolasora N, Pannala R, Mountantonakis S, et al. If asked, hospitalized patients will choose whether to receive life-sustaining therapies. *J Hosp Med.* 2006;1(3):161-167.
2. Stein RA, Sharpe L, Bell ML, Boyle FM, Dunn SM, Clarke SJ. Randomized controlled trial of a structured intervention to facilitate end-of-life decision making in patients with advanced cancer. *J Clin Oncol.* 2013;31(27):3403-3410.
3. El-Jawahri A, Podgurski LM, Eichler AF, et al. Use of video to facilitate end-of-life discussions with patients with cancer: a randomized controlled trial. *J Clin Oncol.* 2010;28(2):305-310.
4. Volandes AE, Paasche-Orlow MK, Mitchell SL, et al. Randomized controlled trial of a video decision support tool for cardiopulmonary resuscitation decision making in advanced cancer. *J Clin Oncol.* 2013;31(3):380-386.
5. El-Jawahri A, Mitchell SL, Paasche-Orlow MK, et al. A Randomized Controlled Trial of a CPR and Intubation Video Decision Support Tool for Hospitalized Patients. *J Gen Intern Med.* 2015;30(8):1071-1080.
6. Mittal K, Sharma K, Dangayach N, et al. Use of a standardized code status explanation by residents among hospitalized patients. *J Community Hosp Intern Med Perspect.* 2014;4.
7. Rhondali W, Perez-Cruz P, Hui D, et al. Patient-physician communication about code status preferences: a randomized controlled trial. *Cancer.* 2013;119(11):2067-2073.
8. Merino AM, Greiner R, Hartwig K. A Randomized Controlled Trial of a CPR Decision Support Video for Patients Admitted to the General Medicine Service. *J Hosp Med.* 2017;12(9):700-704.
9. Wilson ME, Krupa A, Hinds RF, et al. A video to improve patient and surrogate understanding of cardiopulmonary resuscitation choices in the ICU: a randomized controlled trial. *Crit Care Med.* 2015;43(3):621-629.
10. Richardson-Royer C, Naqvi I, Riffel C, et al. A video depicting resuscitation did not impact upon patients' decision-making. *Int J Gen Med.* 2018;11:73-77.
11. Epstein AS, Volandes AE, Chen LY, et al. A randomized controlled trial of a cardiopulmonary resuscitation video in advance care planning for progressive pancreas and hepatobiliary cancer patients. *J Palliat Med.* 2013;16(6):623-631.
12. Volandes AE, Brandeis GH, Davis AD, et al. A randomized controlled trial of a goals-of-care video for elderly patients admitted to skilled nursing facilities. *J Palliat Med.* 2012;15(7):805-811.
13. El-Jawahri A, Paasche-Orlow MK, Matlock D, et al. Randomized, Controlled Trial of an Advance Care Planning Video Decision Support Tool for Patients With Advanced Heart Failure. *Circulation.* 2016;134(1):52-60.
14. Yamada R, Galecki AT, Goold SD, Hogikyan RV. A multimedia intervention on cardiopulmonary resuscitation and advance directives. *J Gen Intern Med.* 1999;14(9):559-563.
15. Kirchhoff KT, Hammes BJ, Kehl KA, Briggs LA, Brown RL. Effect of a disease-specific advance care planning intervention on end-of-life care. *J Am Geriatr Soc.* 2012;60(5):946-950.

eFigure. Flow of Studies Through the Review Process

PRISMA 2009 Flow Diagram

