Eastern Pulmonary Conference
September 12, 2019

Choosing Wisely in Critical Care

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Nothing to Disclose

Choosing Wisely in Critical Care

Objectives

1. Upon completion of this learning activity, participants should be able to apply the principles of reducing low value interventions in ICU care
2. Upon completion of this learning activity, participants should be able to reduce testing, over-sedation, over-transfusion, over-feeding, and address goals of care

U.S. Health Care

Annual health care costs in the United States (2012) estimated to be $2.87 trillion

18.3% of the Gross Domestic Product

Intensive care is particularly expensive care

$100 billion annually

15% of hospital beds

Variations in regional health care utilization suggest that 30% of expeditures are wasted on nonbeneficial measures *Fisher et al. N Engl J Med 2009;360:849*

Genesis of the Choosing Wisely Campaign

Physician Charter for Medical Professionalism

"Physicians are required to provide health care that is based on the wise and cost-effective management of clinical resources"

The American Board of Internal Medicine Foundation, American College of Physicians, European Federation of Internal Medicine

Medicine's Ethical Responsibility for Health Care Reform — The Top Five List

Howard Brody, M.D., Ph.D.

Physicians should lead in declaring which tests and interventions should be used less commonly

Recommended that professional societies appoint a panel to identify the "Top 5" tests or treatments that are common, expensive, and not supported by current evidence to provide any meaningful benefit to most patients

Brody H. N Engl J Med 2010;362:283

Reduce Low-Value Care

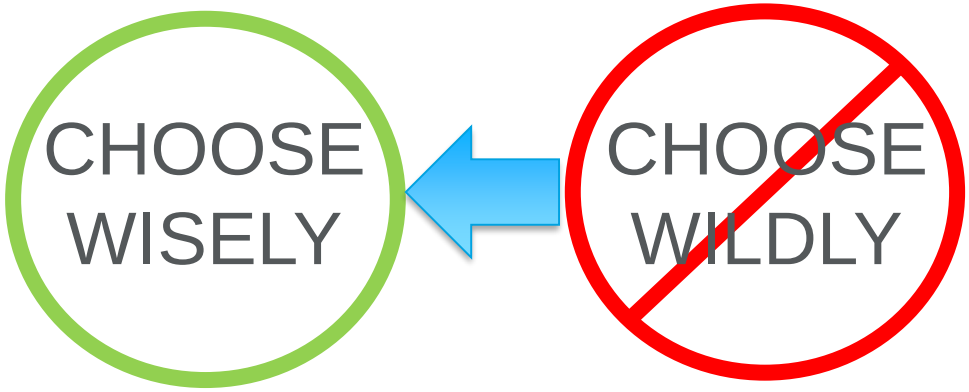
Physician decision-making is an important factor

Contributes to rising healthcare costs

Varies widely in ordering practices

Poor correlation between more spending and better outcomes

Often not evidence-based



Five Things Physicians & Patients Should Question

Choosing Wisely® aims to promote conversations between physicians and patients by helping patients choose care that is:

- Supported by evidence
- Not duplicative of other tests or procedures already received
- Free from harm
- Truly necessary

Choosing Wisely®

An initiative of the ABIM Foundation

www.choosingwisely.org

Choosing Wisely Campaign

- Launched by ABIM Foundation in 2012
- Specialty society top 5 lists
- Collaboration with Consumer Reports
  - Consumer partners
  - Patient education
- 80 specialty organizations representing > 1,000,000 clinicians have published 525 recommendations as of 2017

www.choosingwisely.org

AMERICAN THORACIC SOCIETY DOCUMENTS

An Official American Thoracic Society/American Association of Critical-Care Nurses/American College of Chest Physicians/Society of Critical Care Medicine Policy Statement: The Choosing Wisely® Top 5 List in Critical Care Medicine

Scott D. Halpern, Deborah Becker, J. Randall Curtis, Robert Fowler, Robert Hyzy, Lewis J. Kaplan, Nishi Rawat, Curtis N. Sessler, Hannah Wunsch, and Jeremy M. Kahn; on behalf of the Choosing Wisely Taskforce

THIS OFFICIAL STATEMENT WAS APPROVED BY THE AMERICAN THORACIC SOCIETY (ATS), JUNE 2014; THE AMERICAN ASSOCIATION OF CRITICAL-CARE NURSES (AACN), MARCH 2014; THE AMERICAN COLLEGE OF CHEST PHYSICIANS (ACCP), APRIL 2014; AND THE SOCIETY OF CRITICAL CARE MEDICINE (SCCM), MARCH 2014

Routine diagnostic testing

Red blood cell transfusion

Parenteral nutrition indications

Sedation practice

Life support and goals of care

Halpern et al. AJRCCM 2014

Choosing Wisely

An initiative of the ABIM Foundation

Critical Care Societies Collaborative - **Critical Care**

Five Things Physicians and Patients Should Question

1 Don't order diagnostic tests at regular intervals (such as every day), but rather in response to specific clinical questions.

Many diagnostic studies (including chest radiographs, arterial blood gases, blood chemistries and counts and electrocardiograms) are ordered at regular intervals (e.g., daily). Compared with a practice of ordering tests only to help answer clinical questions, or when doing so will affect management, the routine ordering of tests increases health care costs, does not benefit patients and may in fact harm them. Potential harms include anemia due to unnecessary phlebotomy, which may necessitate risky and costly transfusion, and the aggressive work-up of incidental and non-pathological results found on routine studies.

2 Don't transfuse red blood cells in hemodynamically stable, non-bleeding ICU patients with a hemoglobin concentration greater than 7 mg/dL.

Most red blood cell transfusions in the ICU are for benign anemia rather than acute bleeding that causes hemodynamic compromise. For all patient populations in which it has been studied, transfusing red blood cells at a threshold of 7 mg/dL is associated with similar or improved survival, fewer complications and reduced costs compared to higher transfusion triggers. More aggressive transfusion may also limit the availability of a scarce resource. It is possible that different thresholds may be appropriate in patients with acute coronary syndromes, although most observational studies suggest harms of aggressive transfusion even among such patients.

3 Don't use parenteral nutrition in adequately nourished critically ill patients within the first seven days of an ICU stay.

For patients who are adequately nourished prior to ICU admission, parenteral nutrition initiated within the first seven days of an ICU stay has been associated with harm, or at best no benefit, in terms of survival and length of stay in the ICU. Early parenteral nutrition is also associated with unnecessary costs. These findings are true even among patients who cannot tolerate enteral nutrition. Evidence is mixed regarding the effects of early parenteral nutrition on nosocomial infections. For patients who are severely malnourished directly prior to their ICU admission, there may be benefits to earlier parenteral nutrition.

4 Don't deeply sedate mechanically ventilated patients without a specific indication and without daily attempts to lighten sedation.

Many mechanically ventilated ICU patients are deeply sedated as a routine practice despite evidence that using less sedation reduces the duration of mechanical ventilation and ICU and hospital length of stay. Several protocol-based approaches can safely limit deep sedation, including the explicit titration of sedation to the lightest effective level, the preferential administration of analgesic medications prior to initiating anxiolytics and the performance of daily interruptions of sedation in appropriately selected patients receiving continuous sedative infusions. Although combining these approaches may not improve outcomes compared to one approach alone, each has been shown to improve patient outcomes compared with approaches that provide deeper sedation for ventilated patients.

5 Don't continue life support for patients at high risk for death or severely impaired functional recovery without offering patients and their families the alternative of care focused entirely on comfort.

Patients and their families often value the avoidance of prolonged dependence on life support. However, many of these patients receive aggressive life-sustaining therapies, in part due to clinicians' failures to elicit patients' values and goals, and to provide patient-centered recommendations. Routinely engaging high-risk patients and their surrogate decision makers in discussions about the option of foregoing life-sustaining therapies may promote patients' and families' values, improve the quality of dying and reduce family distress and bereavement. Even among patients pursuing life-sustaining therapy, initiating palliative care simultaneously with ongoing disease-focused therapy may be beneficial.

These items are provided solely for informational purposes and are not intended as a substitute for consultation with a medical professional. Patients with any specific questions about th
on this list or their individual situation should consult their physician.

www.choosingwisely.org

How This List Was Created

This document was prepared as an initiative of the Critical Care Societies Collaborative, which includes the American Association of Critical-Care Nurses, the American College of Chest Physicians, the American Thoracic Society and the Society of Critical Care Medicine. Each of these four societies was invited to nominate up to three members to join the taskforce. The final taskforce included 10 members representing all four societies and the disciplines of internal medicine, surgery, anesthesiology, emergency medicine and critical care nursing. Taskforce members initially proposed 58 items for consideration. The taskforce evaluated each item on five criteria (evidence, prevalence, cost, relevance, innovation), and agreed to narrow the list to 16 items. The taskforce debated the conceptual merits of these 16, and selected nine in which to pursue in-depth evidence reviews and consultations with external content experts. Taskforce members then independently scored each item on a scale from 1-9, rating each item on its overall impact as well as on each of the five criteria. The five items with the best mean overall scores were retained in the "penultimate" list. The taskforce then reviewed and edited the wording of items on the penultimate list, and submitted it to the four societies' executive committees. The executive committees sought feedback from additional experts in the field, debated the items and provided written comments to the taskforce. The taskforce deliberated and incorporated these suggestions where appropriate to create the final list, resolving any conflicts through discussion. All four societies endorsed the final list.

Members of the taskforce were: Scott D. Halpern, MD, PhD (Chair), Deborah Becker, PhD, RN, J. Randall Curtis, MD, MPH, Robert Fowler, MD, Robert Hyzy, MD, Jeremy M. Kahn, MD, MSc, Lewis Kaplan, MD, Nishi Rawat, MD, Curtis Sessler, MD and Hannah Wunsch, MD, MSc.

The disclosure and conflict of interest policies for the American Association of Critical Care Nurses, the American College of Chest Physicians, the American Thoracic Society and the Society of Critical Care Medicine can be found at www.aacn.org, www.chestnet.org, www.thoracic.org and www.sccm.org respectively.

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About the ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice. To learn more about the ABIM Foundation, visit www.abimfoundation.org.

About the Collaborative Societies

The Critical Care Societies Collaborative (CCSC) was established in 2000 as a partnership among the four major professional and scientific societies whose members care for America's critically ill and injured. These societies are: the American Association of Critical-Care Nurses (AACN), the American College of Chest Physicians (ACCP), the American Thoracic Society (ATS) and the Society of Critical Care Medicine (SCCM). The CCSC leverages its collective and multi-professional expertise through communication, education, research and advocacy efforts. The CCSC speaks with a unified voice representing more than 150,000 critical care professionals to bring important issues to the forefront in public policy and in the health care arena.

To learn more about the American Association of Critical-Care Nurses, the American College of Chest Physicians, the American Thoracic Society and the Society of Critical Care Medicine, please visit www.aacn.org, www.chestnet.org, www.thoracic.org and www.sccm.org respectively.

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Critical Care Societies Collaborative - **Critical Care**

AMERICAN ASSOCIATION of CRITICAL-CARE NURSES
CHEST AMERICAN COLLEGE of CHEST PHYSICIANS
ATS We help the world breathe
Society of Critical Care Medicine

Five Things Physicians and Patients Should Question

Caveats and cautions

- The list is a starting point for conversations between physicians & patients, not a mandate; application should be patient-centered
- Item selection was by consensus, not a formal evidence-based systematic approach
- **Data will evolve, and may impact some recommendations**
- **Implementation is the next challenge**

Recommendations Remain Valid in 2016, 2017, 2018

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CHEST · Society of Critical Care Medicine

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Survey of original authors:
Strongly agree + Agree

2016	2017	2018
9+1	10+0	10+0
10+0	8+2	10+0
7+3	6+4	7+3
9+1	10+0	10+0
9+1	8+2	10+0

Choosing Wisely in Critical Care: Results of a National Survey From the Critical Care Societies Collaborative

Ruth Kleinpell, PhD, RN, ACNP, FCCM[1,2]; Curtis N. Sessler, MD, FCCP, FCCM[3,4]; Clareen Wiencek, PhD, RN, ACNP, ACHPN[5,6]; Marc Moss, MD[7,8]

- 2520 responses from survey of members of the CCSC professional societies
- 51% of respondents had implemented Choosing Wisely recommendations
  - Institutional protocol or guideline
  - EMR order set
  - Electronic dashboard tracking
- 42% quality improvement initiative
- 14% research

Kleinpell et al. Crit Care Med 2019

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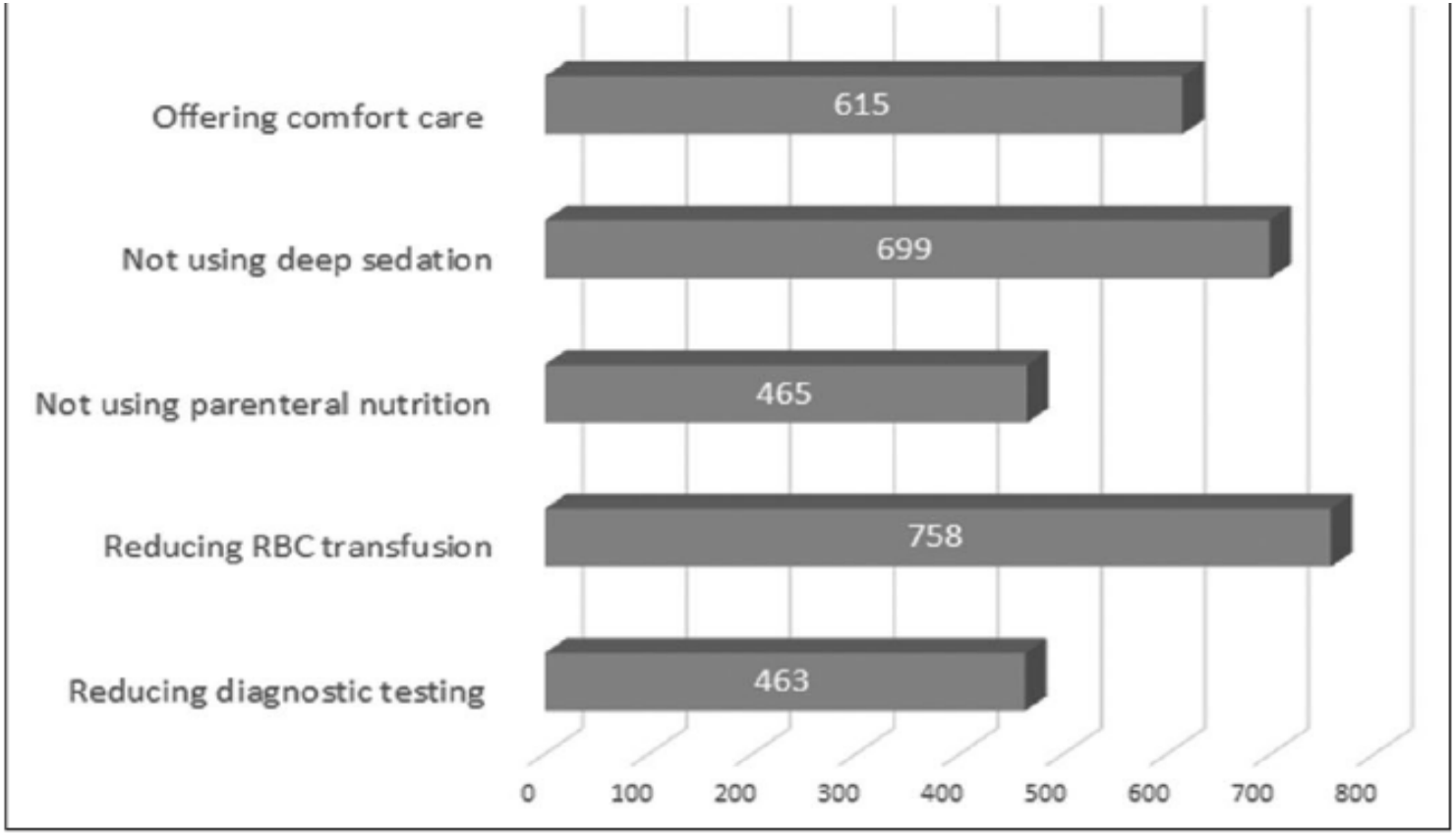

Kleinpell et al. CCM 2019

TABLE 1. Ways "Choosing Wisely" Recommendations Have Been Implemented

Changes made to order sets
Development of specific policies or guidelines
Changes in recommendations for transfusions
Use of less volume blood draw tubes
Use of palliative care triggers
Evaluation of nutrition in the ICU
Decreasing sedation and reducing delirium initiatives
Tracking of utilization by practitioner
Electronic medical record order set changes
Electronic medical record reminders for transfusion restrictions
Development of standard operating procedures concerning transfusions, laboratory orders, sedation, palliative care, and nutrition
Use of ICU checklist to reinforce reducing unnecessary diagnostic testing
Educational campaigns
Orientation information to new employees

Kleinpell et al. CCM 2019

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Kleinpell et al. CCM 2019

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1. Don’t order diagnostic tests at regular intervals (such as every day), but rather in response to specific questions

Routine Diagnostic Testing

Many diagnostic studies are ordered at regular intervals (i.e. daily)

- Blood chemistries
- Blood counts
- Arterial blood gases
- Chest radiographs
- Electrocardiograms

Routine Diagnostic Testing

In comparison to ordering tests only to answer clinical questions, or when doing so to help answer clinical questions, routine ordering of tests…

- Increases healthcare costs
- Does not benefit patients
- Potential for harm
- Anemia from phlebotomy
- Aggressive work-up of incidental and non-pathological results found on routine studies

Question

Who among these patients would you NOT order a morning chest x-ray?

- Stable intubated patient
- Non-intubated patient coughing after NG tube insertion
- Patient with existing tracheostomy, NG tube, central line
- Intubated patient, just had central line insertion

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Routine Chest Radiography in the ICU

2457 daily routine CXR in 754 consecutive ICU patients

- Unexpected findings in < 6%
- Change in management in < 50% of those

Graat et al. Crit Care 2012:16:R11

Comparison of routine and on-demand prescription of chest radiographs in mechanically ventilated adults: a multicentre, cluster-randomised, two-period crossover study

Gilles Hejblum, Ludivine Chalumeau-Lemoine, Vincent Ioos, Pierre-Yves Boëlle, Laurence Salomon, Tabassome Simon, Jean-François Vibert, Bertrand Guidet

- Cluster-randomized open label crossover study of 849 patients in 21 French ICUs
- 32% fewer CXR in “on demand” (0.75 CXR/day) vs “routine” (1.09 CXR/day)
- No difference in number or type of interventions related to CXR findings
- No difference in duration of MV, ICU LOS, or mortality

Hejblum et al. Lancet 2009;374:1687

Routine chest x-rays in intensive care units: a systematic review and meta-analysis

Anusoumya Ganapathy[1], Neill KJ Adhikari[2*], Jamie Spiegelman[3] and Damon C Scales[2]

- 9 studies (39,358 CXR, 9611 patients) that examined restrictive vs routine CXR ordering (3 RCTs, 6 observational)
- With restrictive approach, ↓ CXR varied from 50% fewer to nearly 10-fold fewer
- No differences in ICU or hospital mortality, ICU or hospital LOS, duration of MV
- Only one trial systemically assessed for missed findings

Ganapathy et al. Crit Care 2012;16:R68

High-Value Testing Begins With a Few Simple Questions

Questions physicians should ask when ordering a test

- Will the test result change patient care?
- If the patient has had the test previously, are the results likely to be different?
- What are the probability and potential adverse consequences of a false positive result?

Laine C. Ann Intern Med 2012

Strategies to Control Laboratory Testing

Computer order entry

Incorporation of decision aids

- Reduce duplicative orders
- Reduce inappropriate daily lab testing
- More efficient utilization of healthcare personnel

May et al. Am J Clin Pathol 2006;126:200

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Kleinpell et al. CCM 2019

Question

These patients have hemoglobin = 8 g/dL. Who would you transfuse pRBC?

- 70 y/o woman with septic shock
- 20 y/o woman with ARDS
- 60 y/o man with COPD, respiratory failure
- 50 y/o man with bleeding duodenal ulcer

Question

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2. Don’t transfuse red blood cells in hemodynamically stable, non-bleeding ICU patients with a hemoglobin concentration greater than 7 g/dL

Frequency of RBC Transfusion in the ICU

Mixed medical-surgical population

44% of ICU patients received pRBC

Average of 4.6 U/patient

Average Hgb at transfusion = 8.6 g/dL

- Hbg > 7.0 g/dL in 65% of patients *Corwin et al. Crit Care Med 2004;32:39*

Medical ICU patients in Maryland

- 18% of ICU patients received pRBC *Murphy et al. Crit Care Med 2013;41:2344*

Risks of RBC Transfusions

- Transfusion reactions
- Fluid overload
- Pulmonary edema (TACO)
- TRALI (less common with RBC)
- Immunomodulation
- Potential savings of $4 billion if eliminate 25% of RBC transfusions in U.S. each year

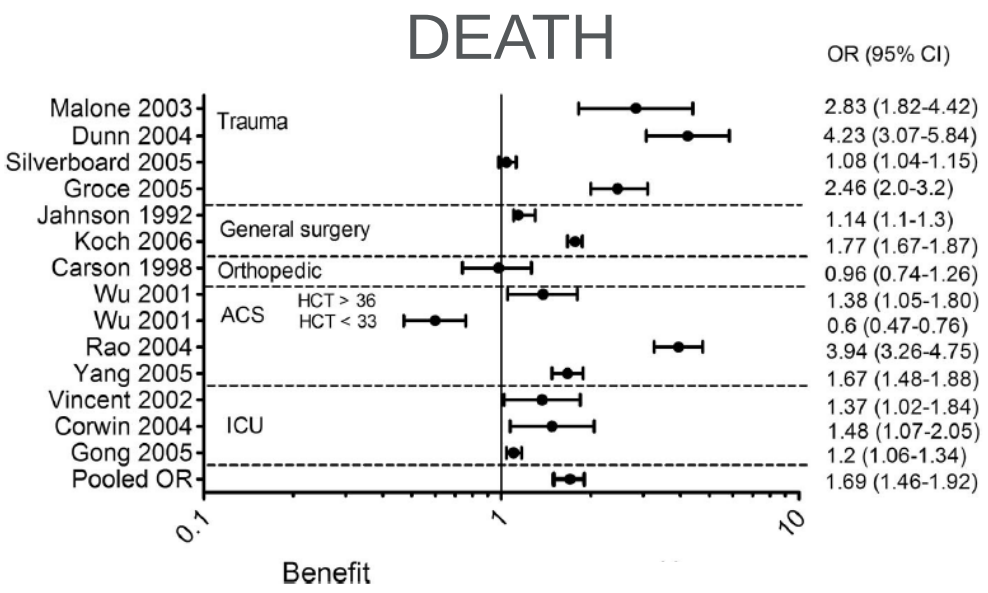
Efficacy of red blood cell transfusion in the critically ill: A systematic review of the literature*

Paul E. Marik, MD, FACP, FCCM, FCCP; Howard L. Corwin, MD, FACP, FCCM, FCCP

Risks of RBC transfusion > benefits in 25 of 42 observational studies

Independent predictor of

- death (OR 1.7)
- Infection (OR 1.8)
- ARDS (OR 2.5)



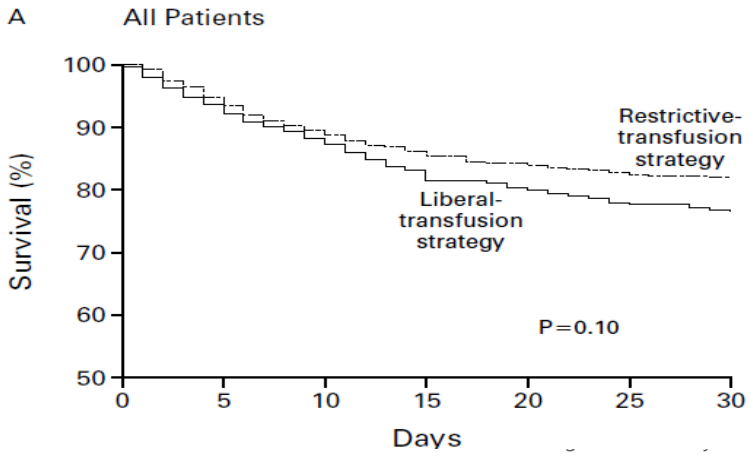
A MULTICENTER, RANDOMIZED, CONTROLLED CLINICAL TRIAL OF TRANSFUSION REQUIREMENTS IN CRITICAL CARE

PAUL C. HÉBERT, M.D., GEORGE WELLS, PH.D., MORRIS A. BLAJCHMAN, M.D., JOHN MARSHALL, M.D., CLAUDIO MARTIN, M.D., GIUSEPPE PAGLIARELLO, M.D., MARTIN TWEEDDALE, M.D., PH.D., IRWIN SCHWEITZER, M.SC., ELIZABETH YETISIR, M.SC., AND THE TRANSFUSION REQUIREMENTS IN CRITICAL CARE INVESTIGATORS FOR THE CANADIAN CRITICAL CARE TRIALS GROUP*

Multicenter RCT of 838 euvolemic patients

Restrictive (Hgb < 7.0 g/dL) had lower hospital (but not 30 day) mortality vs liberal (Hgb < 10 g/dL)

- Significantly lower mortality with restrictive strategy for young and less acutely ill



Hebert et al. N Engl J Med 1999; 340:409

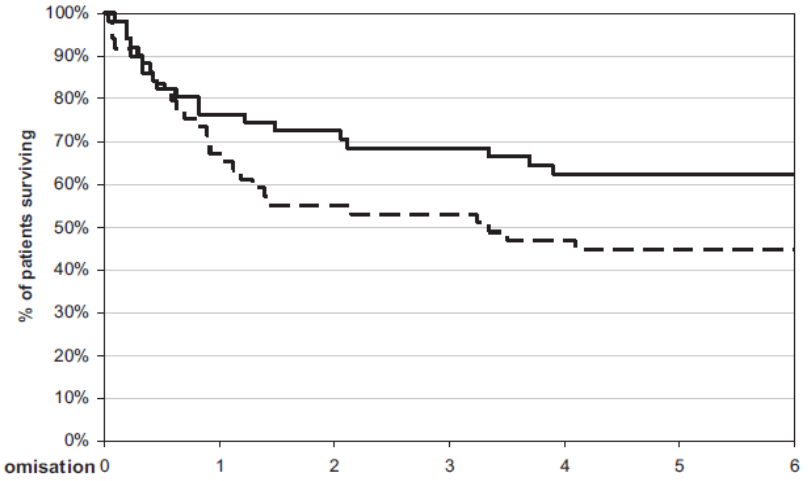
Restrictive Versus Liberal Transfusion Strategies for Older Mechanically Ventilated Critically Ill Patients: A Randomized Pilot Trial*

RCT of 100 ICU patients age ≥ 55 yr receiving MV ≥ 4 d, randomized to restrictive (< 7.0 g/dL) or liberal (< 9.0 g/dL) strategies

Trend for lower mortality (RR 0.68 (0.44-1.05))

No difference…

- Complications
- Duration MV
- Organ dysfunction



Walsh et al Crit Care Med 2013;41:2354

Red blood cell transfusion and mortality among patients hospitalized for acute coronary syndromes: A systematic review

Michael Garfinkle [a], Patrick R. Lawler [b,c], Kristian B. Filion [d], Mark J. Eisenberg [a,b,e,*,1]

- Systematic review of 11 observational studies (290,847 patients)
- Transfusion associated with ↑ unadjusted risk of mortality (OR 1.9-11.2)
- RBC transfusion at Hgb < 8.0 g/dL beneficial or neutral
- RBC transfusion at Hgb > 11.0 g/dL harmful or neutral

Garfinkle et al. Internat J Cardiol 2012;164:151

Transfusion Strategies for Acute Upper Gastrointestinal Bleeding

RCT of restrictive (Hgb < 7 g/dL) vs liberal (Hgb < 9 g/dL) transfusion strategy in 921 patients with UGI bleeding

49% restrictive vs 86% liberal pts transfused

Liberal patients had more further bleeding, AE, higher portal pressure gradient

Overall, greater survival with restrictive approach (HR for death 0.55 (0.33-0.92)

- True for cirrhosis with Child's A or B, not C or PUD

Villanueva et al. N Engl J Med 2013;368:11

Transfusion Threshold

Compared to higher transfusion thresholds, transfusing RBCs at a threshold of 7 mg/dL is associated with similar or improved survival, fewer complications, and reduced costs – for patient populations that have been studied

More aggressive transfusion may also limit the availability of a scarce resource

TABLE 1. Ways "Choosing Wisely" Recommendations Have Been Implemented

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Kleinpell et al. CCM 2019

3

Don’t use parenteral nutrition in adequately nourished critically ill patients within the first seven days of an ICU stay.

For patients who are adequately nourished prior to ICU admission, parenteral nutrition initiated within the first seven days of an ICU stay has been associated with harm, or at best no benefit, in terms of survival and length of stay in the ICU. Early parenteral nutrition is also associated with unnecessary costs. These findings are true even among patients who cannot tolerate enteral nutrition. Evidence is mixed regarding the effects of early parenteral nutrition on nosocomial infections. For patients who are severely malnourished directly prior to their ICU admission, there may be benefits to earlier parenteral nutrition.

3. Don’t use parenteral nutrition in adequately nourished critically ill patients within the first 7 days of an ICU stay

Nutrition in Critically Ill Patients

Enteral nutrition is the optimal method for delivering nutritional support during critical illness *McClave et al. JPEN 2009;33:277, Singer et al Clin Nutr 2009;28:387*

For patients with pre-existing protein-calorie malnutrition, earlier parenteral nutrition may be helpful if enteral nutrition is insufficient to meet nutritional needs *McClave et al. JPEN 2009;33:277, Kreymann et al. Clin Nutr 2006;25:210*

Guidelines for the provision and assessment of nutrition support therapy in the adult critically ill patient: Society of Critical Care Medicine and American Society for Parenteral and Enteral Nutrition: Executive Summary*

If early enteral nutrition is not feasible or available over the first 7 days following ICU admission, no nutritional support therapy should be provided (C).

If the patient who was previously healthy before critical illness with no evidence of protein-calorie malnutrition, use of parenteral nutrition should be reserved and initiated only after 7 days of hospitalization (E)

Martindale et al. Crit Care Med 2009;37:1757

Early versus Late Parenteral Nutrition in Critically Ill Adults

Multicenter RCT of ICU patients who received early - within 2d (n = 2312) or late - day 8 (n = 2328) parenteral nutrition (PN)

Waiting until day 7 to start PN associated with…

- ↑ likelihood discharged alive from ICU but no difference in ICU or hosp death or 90d survival
- Fewer ICU infections
- Less prolonged MV
- Shorter duration RRT
- Reduced health care costs by $1600 / subject

Casaer et al. N Engl J Med 2011;365:506

Early Parenteral Nutrition in Critically Ill Patients With Short-term Relative Contraindications to Early Enteral Nutrition

A Randomized Controlled Trial

Multicenter RCT of 1372 ICU patients with relative contraindications to early enteral nutrition randomized to early parenteral nutrition or standard care

No difference in 60 day mortality

0.5 day short duration MV, but no difference in ICU or hospital LOS, or infections with early PN

Doig et al. JAMA 2013;309:2130

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4

Don’t deeply sedate mechanically ventilated patients without a specific indication and without daily attempts to lighten sedation.

Many mechanically ventilated ICU patients are deeply sedated as a routine practice despite evidence that using less sedation reduces the duration of mechanical ventilation and ICU and hospital length of stay. Several protocol-based approaches can safely limit deep sedation, including the explicit titration of sedation to the lightest effective level, the preferential administration of analgesic medications prior to initiating anxiolytics and the performance of daily interruptions of sedation in appropriately selected patients receiving continuous sedative infusions. Although combining these approaches may not improve outcomes compared to one approach alone, each has been shown to improve patient outcomes compared with approaches that provide deeper sedation for ventilated patients.

4. Don’t deeply sedate mechanically ventilated patients without a specific indication and without daily attempts to lighten sedation

Avoid Deep Sedation

Many mechanically ventilated ICU patients are deeply sedated as a routine practice despite evidence that using less sedation reduces the duration of mechanical ventilation and ICU and hospital LOS

Basic Tenets of Sedation & Analgesia Management

- Establish a specific indication
- Set a target level of consciousness
- Monitor pain & sedation using validated scales
- Titrate medications to achieve goals while maintaining the lightest level of sedation
- Periodically reduce sedation until alert if using continuous sedation

Prospective Clinical Trials of Sedation Interventions

Study	Setting	Intervention	Major results
Brook	RCT	Protocol, intermittent rx	P: ↓ MV, ICU, & Hosp LOS; ↓ trachs
Kress	RCT	Daily interruption of sedation	DIS: ↓ MV & ICU LOS ; ↓ tests
MacLaren	2-phase	Protocol	P: ↓ pain; ↓ hourly cost
Mascia	2-phase	Guidelines	G: ↓ costs; ↓ MV, ICU, & hosp LOS
Brattebo	2-phase	Protocol	P: ↓ MV LOS
De Jonghe	2-phase	Algorithm	A: ↓ MV LOS
Breen	RCT	Analgesic vs sed	A: ↓ MV LOS
Carson	RCT	Propofol + DIS v Int Lorazepam	Prop: ↓ MV LOS
Chanques	2-phase	Pain & agitation protocol	P: ↓ pain, agitation; ↓ MV LOS; ↓ nosocomial infection

Sessler & Varney Chest 2008; 133:552-65

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Daily Sedation Interruption in Mechanically Ventilated Critically Ill Patients Cared for With a Sedation Protocol

A Randomized Controlled Trial

- RCT of 430 North American ICU patients to sedation protocol vs sedation protocol + DIS
- Protocol: continuous infusion targeting light sedation
- Primary outcome: time to successful extubation
- Continuous opioid and/or benzo infusions
- No difference between groups in duration of MV, ICU LOS, hospital LOS, self-extubation, delirium
- DIS associated with higher doses of midazolam & fentanyl, greater RN workload

Mehta et al. JAMA 2012

Practice Patterns and Outcomes Associated With Early Sedation Depth in Mechanically Ventilated Patients: A Systematic Review and Meta-Analysis*

Robert J. Stephens, BS[1]; Matthew R. Dettmer, MD[2]; Brian W. Roberts, MD[3]; Enyo Ablordeppey, MD, MPH[4,5]; Susan A. Fowler, MLIS[6]; Marin H. Kollef, MD[7]; Brian M. Fuller, MD, MSCI[4,5]

Crit Care Med 2018

Deep sedation within 48h of initiation of MV

Meta-analysis of 9 studies (4521 patients)

Early light sedation associated with…

Lower mortality (9.2% vs 27.6%)

2 fewer ventilator days

3 fewer ICU days

Less delirium (28.7% vs 48.5%)

Focus on light sedation early (even ED)

Potential Cost Savings Associated With Light Sedation

In controlled trials versus usual care, sedation strategies are associated with average shorter ventilator time (2.5 d), shorter ICU LOS (3 d), and shorter ward LOS (1.5 d), yielding direct variable costs saved of about $500/case, or $500 million (est 1,000,000 MV case/yr)

Clinical Practice Guidelines for the Management of Pain, Agitation, and Delirium in Adult Patients in the Intensive Care Unit

We *recommend* that sedative medications should be titrated to maintain a light rather than a deep level of sedation in adult ICU patients, unless clinically contraindicated (+1B)

Target RASS = 0 to -1 or -2 (wakes up and follows you command to make eye contact)

We *recommend* either daily sedation interruption or a light target level of sedation be routinely used in mechanically ventilated adult ICU patients (+1B)

Barr et al. Crit Care Med 2013

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5

Don’t continue life support for patients at high risk for death or severely impaired functional recovery without offering patients and their families the alternative of care focused entirely on comfort.

Patients and their families often value the avoidance of prolonged dependence on life support. However, many of these patients receive aggressive life-sustaining therapies, in part due to clinicians’ failures to elicit patients’ values and goals, and to provide patient-centered recommendations. Routinely engaging high-risk patients and their surrogate decision makers in discussions about the option of foregoing life-sustaining therapies may promote patients’ and families’ values, improve the quality of dying and reduce family distress and bereavement. Even among patients pursuing life-sustaining therapy, initiating palliative care simultaneously with ongoing disease-focused therapy may be beneficial.

5. Don’t continue life support for patients at high risk for death or severely impaired functional recovery without offering patients and their families the alternative of care focused entirely on comfort

Comfort Care

Patients and their families often value the avoidance of prolonged dependence on life support

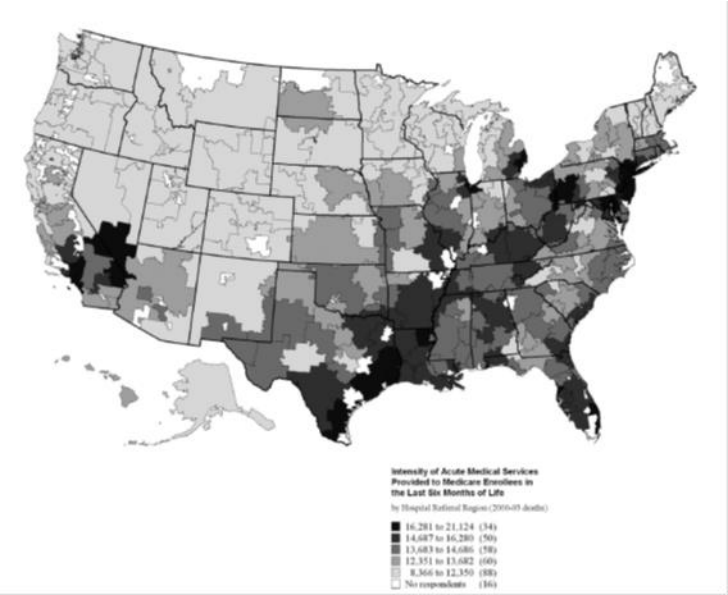
However, many of these patients receive aggressive life-sustaining therapies, in part due to clinicians' failures to elicit patients' values and goals, and to provide patient-centered recommendations

Comfort Care

There is a societal default to provide aggressive care near the end of life

There is some regional variation in end-of-life care intensity

Darker shade = greater healthcare expenditure in final 6 months of life (Medicare data)

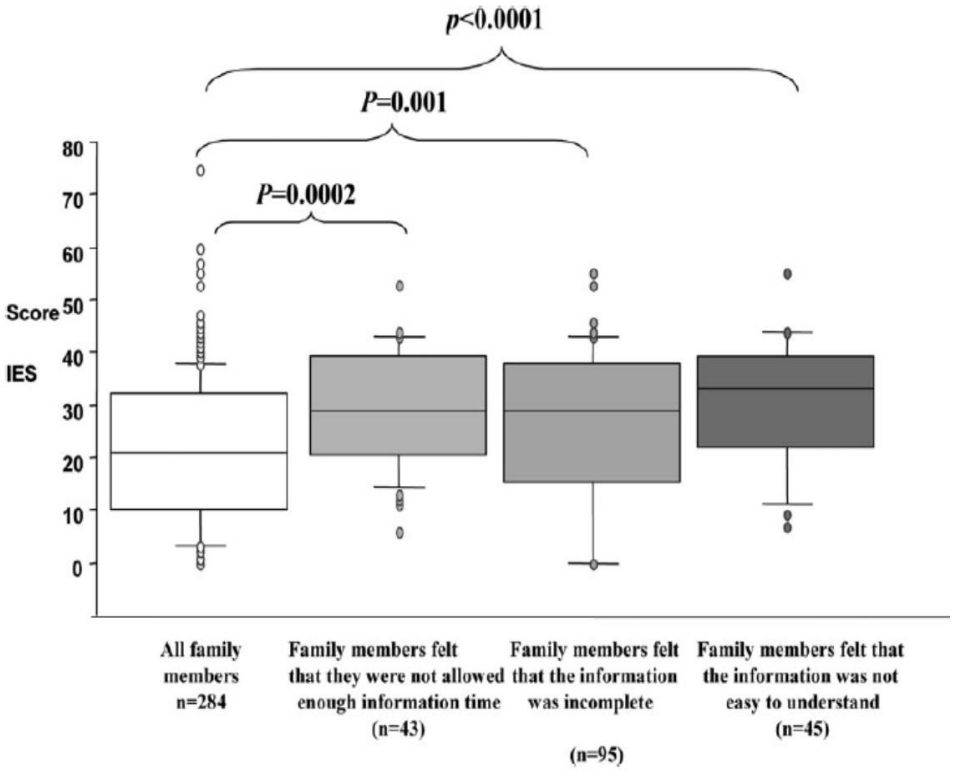


Barnato et al. Med Care 2007;34:386

Risk of Post-traumatic Stress Symptoms in Family Members of Intensive Care Unit Patients

33% of primary family members had PTSD sx 6 mo after ICU death or discharge

More PTSD if poor communication



Azoulay et al. Am J Respir Crit Care Med 2005;171:987

Comfort Care

Prolonged aggressive care in the ICU is associated with long-lasting pathological bereavement among family members (contrary to most patients desires not to burden their loved ones)

Even among patients pursuing life-sustaining therapy, initiating palliative care simultaneously with ongoing disease-focused therapy may be beneficial

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Choosing Wisely in Critical Care

- There are many opportunities to reduce low value care
- Physicians have an important responsibility to lead these efforts
- Evidence suggests we can often do more by doing less
- Surveys illustrate examples of interventions that can be feasible to implement

Thank you – Questions?