

A Dirty Dozen of Common Errors on Discharging Mechanically Ventilated Patients



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28 May 2020 – ATS Critical Care Training Forum

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Our current model is
death-preventing
critical care.



What would
recovery-focused
critical care look like?



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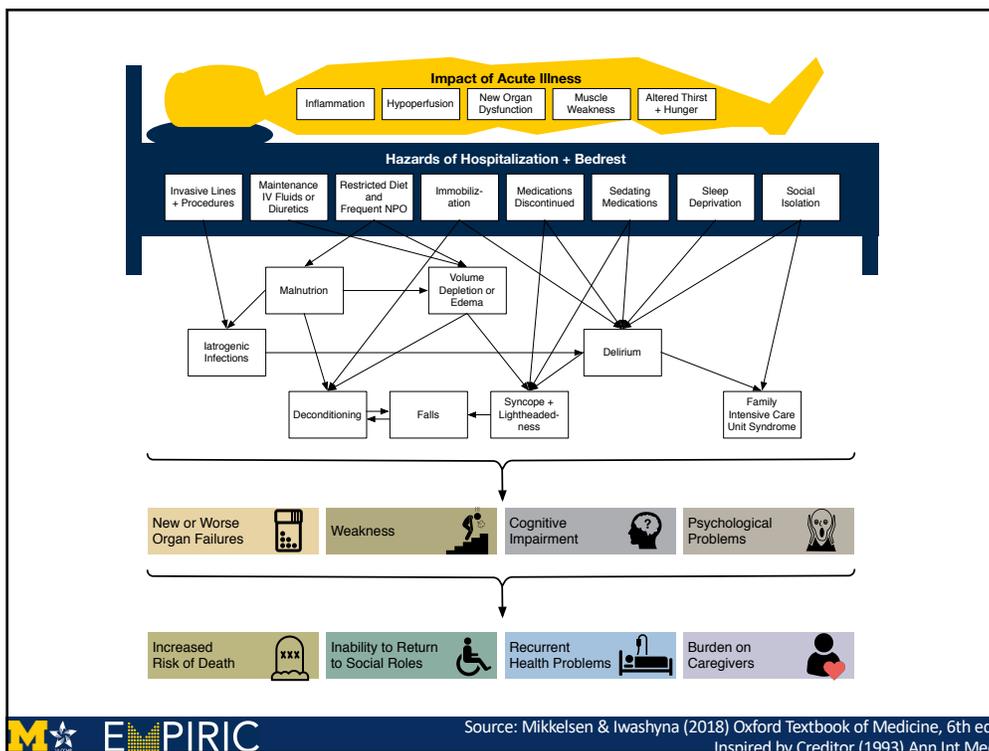
Special Article

Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock: 2016

67 pages of text
655 references
23 categories of recommendations for adults
0 discussion of post-discharge care


Rhodes, Evans, et al. (2017) CCM 45:486

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Meds Follow-up

Education

Lines + Tubes Making it on Their Own

The Dirty Dozen: 12 Points to Cover Prior to COVID Dispo

- Home Meds Restarted?
- Should new ICU meds be stopped?
- What is the anticoag plan?
- Who fields q's prior to 1st follow up?
- Exercise Plan to recondition
- What follow up is most key?
- Removal Plan for tubes/lines/filters
- Written tubes/lines recap
- Teach common readmit issues
- Have PT/OT evaluated?
- Can they pay for what they need?
- Expect post-ICU syndrome

#CoVisuals Source: Dr. TJ Iwashyna @iwashyna @CAHarrisMD

M★ EMPIRIC <https://litfl.com/the-dirty-dozen-common-errors-on-discharging-patients-recovering-from-critical-illness/>

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<p>Restart / Titrate Stop Anticoag</p> <p>1st call for help Priority Follow-Up</p> <p>Lines out List of lines</p> <p>OT/PT Financial Toxicity</p> <p>Exercise Big 5 Readmit Info Sheet</p>	<p>Are their home medications (mostly) restarted?</p> <p>Do they need to be on that anti-psychotic, PPI, H2 blocker, “sleep aid”, or opiates?</p>																														
	<p>Table 4. Unintentional Discontinuation by Medication Group and ICU Stay</p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">No. (%) of Patients</th> <th rowspan="2">AOR (95% CI)^a</th> </tr> <tr> <th>Without ICU Stay</th> <th>With ICU Stay</th> </tr> </thead> <tbody> <tr> <td>Medication discontinued^b</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Statins</td> <td>11 793 (13.5)</td> <td>1484 (14.6)</td> <td>1.11 (1.05-1.18)</td> </tr> <tr> <td> Antiplatelets or anticoagulants</td> <td>5012 (19.1)</td> <td>552 (22.8)</td> <td>1.25 (1.13-1.39)</td> </tr> <tr> <td> Levothyroxine</td> <td>6217 (12.1)</td> <td>614 (15.0)</td> <td>1.29 (1.17-1.41)</td> </tr> <tr> <td> Respiratory inhalers</td> <td>211 (4.4)</td> <td>20 (5.4)</td> <td>1.23 (0.76-1.97)</td> </tr> <tr> <td> Gastric acid suppressors</td> <td>6724 (12.7)</td> <td>670 (15.4)</td> <td>1.26 (1.15-1.37)</td> </tr> </tbody> </table> <p>Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; ICU, intensive care unit. ^aAdjusted for age, sex, low-income status (defined as individual income <\$16 018 or combined household income <\$24 175), number of different prescriptions, and number of primary care physician or specialist visits. ^bThere is detailed information for each medication group in eTable 3 at http://www.jama.com.</p>		No. (%) of Patients		AOR (95% CI) ^a	Without ICU Stay	With ICU Stay	Medication discontinued ^b				Statins	11 793 (13.5)	1484 (14.6)	1.11 (1.05-1.18)	Antiplatelets or anticoagulants	5012 (19.1)	552 (22.8)	1.25 (1.13-1.39)	Levothyroxine	6217 (12.1)	614 (15.0)	1.29 (1.17-1.41)	Respiratory inhalers	211 (4.4)	20 (5.4)	1.23 (0.76-1.97)	Gastric acid suppressors	6724 (12.7)	670 (15.4)	1.26 (1.15-1.37)
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<p>Bell (2011) <i>JAMA</i> 306(8):840-847; Scales (2015) <i>J Gen Intern Med</i> 31(2):196-202; Coe (2020) <i>PLoS ONE</i> https://doi.org/10.1371/journal.pone.0232707</p>																															

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	<p style="text-align: center;">Critical care, ICU, or equivalent</p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px;"> <p>Anticoagulation is appropriate, but the level of anticoagulation (prophylactic dose, intermediate dose, or full-dose) is controversial due to high risk of DVT/PE and lack of high-quality data on efficacy and safety</p> <ul style="list-style-type: none"> ▪ Refer to institutional guidelines ▪ Enroll in a clinical trial if possible ▪ Refer to UpToDate for further discussion </div>	
	<p>Cuker & Peyvandi (2020) UpToDate last updated 11 May 2020 https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19-hypercoagulability</p>	

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	<p>Please pick the 1-3 things they really must do, and make sure they are set-up BEFORE they leave the hospital.</p>
	
	<p>13</p>
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<p>Chopra (2014) Ann Int Med 161(8):562-7</p>																															
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Lines out
List of lines

OT/PT
Financial Toxicity

Exercise
Big 5 Readmit
Info Sheet

Has occupational or physical therapy seen the patient? Plans for adaptation?

Of the patients who had been discharged at the time of this writing, 15 of 45 (33%) had had a dysexecutive syndrome consisting of inattention, disorientation, or poorly organized movements in response to command.



Jackson et al. (2009) *Southern Med J* 102:1150. See also Hopkins et al. (2016) *Rehab Psychol* 61:151. Helms (2020) NFIM early release

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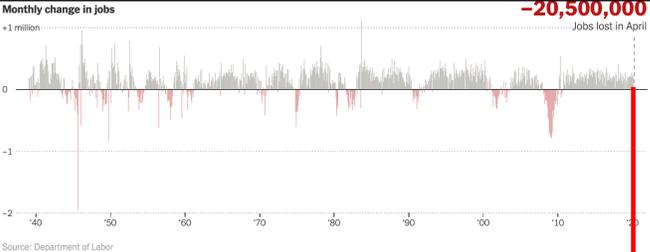
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Monthly change in jobs



-20,500,000
Jobs lost in April

Source: Department of Labor

Can they pay for the follow-up they will need?

With the rise in unemployment + often already stingy insurance, you can ask social work to insure they will really get the medications, physical therapy, basic food, and equipment they need to keep getting better at home.

Hauschildt (2020) *Crit Care Med* online first: doi: 10.1097/CCM.0000000000004378. <https://www.nvtimes.com/interactive/2020/05/08/business/economy/april-jobs-report.html>

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Exercise
Big 5 Readmit
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Have you encouraged patients to gently push themselves to move and exercise?

A Change in rectus femoris (RF) cross-sectional area (CSA) over 10 d

Percentage Change in CSA

Time From Admission, d

No. of patients: 62 (Day 1), 57 (Day 3), 60 (Day 7), 62 (Day 10)

B Measures of muscle wasting in patients assessed by all 3 measures on both day 1 and day 7 (n=28)

Loss, %

RF CSA Fiber CSA Ratio of Protein to DNA

Day 1

0.1 mm

Day 7

0.1 mm

Puthuchery (2013) JAMA 310(15):1591-1600;
see also Neufeld (2020) Chest doi: 10.1016/j.chest.2020.03.059.1

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Exercise
Big 5 Readmit
Info Sheet

Have you educated your patient + their family about how to respond to early signs of the Big 5?

Prescott's Big 5:
Reasons for Potentially Preventable Re-Hospitalizations After Sepsis

	<p>New or Recurrent Infection</p>	<ul style="list-style-type: none"> • Compensatory anti-inflammatory response • Microbiome disruption • Incomplete antibiotic course • Excessive post-hospital antibiotics • Residual lines, tubes, hardware
	<p>CHF Exacerbation</p>	<ul style="list-style-type: none"> • Medications inappropriately restarted • Medications not restarted • Persistent volume overload from resuscitation • Lower post-ICU dry weight due to muscle loss • Lingering myocardial suppression
	<p>Acute Kidney Injury</p>	<ul style="list-style-type: none"> • Failure to redose medications for changed EGFR • Medications inappropriately restarted • Medications not restarted • Residual injury and vulnerability • Lingering myocardial suppression
	<p>COPD Exacerbation</p>	<ul style="list-style-type: none"> • Recurrent microaspirations • Post-pneumonia bronchiolitis • Deconditioning of compensatory muscles • Vulnerability to viral infections or pulmonary edema • Failure to resume inhalers or sub-optimal regimen
	<p>Aspiration Pneumonia</p>	<ul style="list-style-type: none"> • Delirium • Permanent cognitive impairment • Post-intubation swallowing dysfunction

From McSparron & Iwashyna in Deutschman & Neligan *Evidence-Based Critical Care (3rd Edition)*
based on Prescott *et al* (2015) IAMA

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	<p style="text-align: center;">PATIENT EDUCATION INFORMATION SERIES</p> <p>What Is Post-Intensive Care Syndrome (PICS)?</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p>Post-intensive care syndrome (PICS) is a group of problems that people can experience after surviving a life-threatening illness. More than half (50 percent) of all people who survive a hospital stay in the intensive care unit (ICU) will have at least one of the problems seen with PICS. These problems can greatly affect the lives of survivors of critical illness. Problems can be physical or mental and may affect one's ability to think or function in daily life. Many patients are unable to return work and do not have the same energy level that they had before their illness. This fact sheet will review common problems seen with PICS as well as ways to try to prevent and treat these problems.</p> </div> <div style="width: 35%;">  <p>"I have had problems associated with PICS since 2008. I have had issues in all areas: physical, mental and cognitive in one way or another. I have always found it striking when talking to my fellow survivors how much variability there is in how people cope with the problems associated with PICS. One person can still function and work, while another patient who was only hospitalized for three days in the intensive care unit (ICU) will not leave her home. Some people's entire life may be destroyed by fear. Based upon my own and others' experiences, I advocate for early physical therapy and humanizing the ICU as much as possible. I was fortunate that my family, and even my hairdresser and massage therapist were able to visit often, which helped me to feel less anxious and feel better emotionally and physically. We stopped the sedation while I was still on the ventilator, so I was able to think more clearly, communicate, start PT, and even use my cell phone and laptop once I had regained some strength. It is also very helpful to work with your healthcare team to create a schedule so that you can do all of the "work" during the daytime, and sleep at night without interruptions. We need to help patients and families have a menu of strategies to manage stressors during and after the ICU and hospital stay. The sooner a patient starts to think, communicate, and be more physically active, the sooner he or she will start to feel like him or herself again."</p> <p><small>Susan East, ARDS Survivor and Patient Advocate. For more about Susan's story, see: https://www.thoracic.org/patients/par/par-publications/patient-voices/resources/11-east.pdf</small></p> </div> </div>
<p>M EMPIRIC https://www.atsjournals.org/doi/pdf/10.1164/rccm.2018P15</p>	

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We're all making this up together.
Please email me at [tiwashyn @ umich.edu](mailto:tiwashyn@umich.edu) or connect on twitter [@iwashyna](https://twitter.com/iwashyna) for copies of my slides or to talk.



Running your own active program? Consider joining a collaborative of programs learning together by knowledge and data-sharing at www.CAIROrecovery.org

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