A Dirty Dozen of Common Errors on Discharging Mechanically Ventilated Patients

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Our current model is death-preventing critical care.

What would recovery-focused critical care look like?
Increased Risk of Death
Recurrent Health Problems
Weakness
Inability to Return to Social Roles
Burden on Caregivers
Malnutrition
Restricted Diet and Frequent NPO
Iatrogenic Infections
Delirium
Deconditioning
Falls
Syncope + Lightheadedness
Muscle Weakness
Hypoperfusion
Increased Thirst + Hunger
New Organ Failures
Inflammation
Impact of Acute Illness
Volume Depletions or Edema
Diabetes
Malignant Infections
Medication Discontinuation
Seizuring Medications
Sleep Deprivation
Social Isolation
Hazards of Hospitalization + Bedrest

**Meds**  
Follow-up  
Education  
 domains  
Lines +  
Tubes  
Making it on  
Their Own
Meds Follow-up Education

Lines + Tubes Making it on Their Own

https://litfl.com/the-dirty-dozen-common-errors-on-discharging-patients-recovering-from-critical-illness/
Meds Follow-up

Lines + Tubes Making it on Their Own

Education

Meds Follow-up

Lines + Tubes Making it on Their Own

Education
Are their home medications (mostly) restarted?

Do they need to be on that anti-psychotic, PPI, H2 blocker, “sleep aid”, or opiates?

**Table 4. Unintentional Discontinuation by Medication Group and ICU Stay**

<table>
<thead>
<tr>
<th>Medication discontinued</th>
<th>Without ICU Stay</th>
<th>With ICU Stay</th>
<th>AOR (95% CI)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statins</td>
<td>11 / 793 (13.5)</td>
<td>14 / 84 (1.6)</td>
<td>1.11 (1.05-1.18)</td>
</tr>
<tr>
<td>Anticoagulants or anticoagulants</td>
<td>50 / 1291 (19.1)</td>
<td>56 / 62 (22.8)</td>
<td>1.25 (1.13-1.38)</td>
</tr>
<tr>
<td>Levothyroxine</td>
<td>6 / 17 (12.1)</td>
<td>7 / 14 (15.0)</td>
<td>1.29 (1.17-1.41)</td>
</tr>
<tr>
<td>Respiratory inhalers</td>
<td>21 / 117 (18.1)</td>
<td>29 / 5 (5.4)</td>
<td>1.23 (1.07-1.40)</td>
</tr>
<tr>
<td>Gastric acid suppressors</td>
<td>37 / 324 (11.7)</td>
<td>60 / 15 (15.0)</td>
<td>1.28 (1.15-1.41)</td>
</tr>
</tbody>
</table>

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; ICU, intensive care unit.

*Adjusted for age, sex, low income status (defined as individual income < $16,250 or combined household income <$32,175), number of different prescriptions, and number of primary care physician or specialist visits.

**Critical care, ICU, or equivalent**

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

- Refer to institutional guidelines
- Enroll in a clinical trial if possible
- Refer to UpToDate for further discussion

Cuker & Peyvandi (2020) UpToDate last updated 11 May 2020
What is the plan for who the patient should call prior to their first primary care provider visit?

What are the absolutely key follow-up they need?

Please pick the 1-3 things they really must do, and make sure they are set-up BEFORE they leave the hospital.

Are the lines and “temporary devices” all out?

<table>
<thead>
<tr>
<th>By provider</th>
<th>Unaware of CVC Presence*</th>
</tr>
</thead>
<tbody>
<tr>
<td>House staff</td>
<td>39/238 (16.4)</td>
</tr>
<tr>
<td>Interns</td>
<td>22/115 (19.1)</td>
</tr>
<tr>
<td>Residents</td>
<td>17/123 (13.8)</td>
</tr>
<tr>
<td>General medicine teaching attending</td>
<td>33/128 (25.8)</td>
</tr>
<tr>
<td>Hospitalist</td>
<td>18/59 (30.5)</td>
</tr>
<tr>
<td>By service</td>
<td></td>
</tr>
<tr>
<td>General medicine teaching attending or hospitalist</td>
<td>49/187 (26.2)</td>
</tr>
<tr>
<td>Critical care</td>
<td>16/127 (12.6)</td>
</tr>
<tr>
<td>Other subspecialties</td>
<td>29/111 (22.5)</td>
</tr>
<tr>
<td>ICU</td>
<td>16/127 (12.6)</td>
</tr>
<tr>
<td>Non-ICU setting</td>
<td>74/298 (24.8)</td>
</tr>
<tr>
<td>PICC</td>
<td>60/239 (25.1)</td>
</tr>
<tr>
<td>Triple-lumen catheter</td>
<td>30/192 (15.6)</td>
</tr>
</tbody>
</table>

Do they have a written list of all lines/tubes/drains that they had this hospitalization?
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 a dysexecutive syndrome consisting of inattention, disorientation, or poorly organized movements in response to command.

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.
Have you encouraged patients to gently push themselves to move and exercise?

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

- New or Recurrent Infection
  - Compensatory anti-inflammatory response
  - Microbiome disruption
  - Incomplete antibiotic course
  - Excessive post-hospital antibiotics
  - Residual lines, tubes, hardware
  - Medications inappropriately restarted
  - Medications not restarted
  - Persistent volume overload from resuscitation
  - Lower post-ICU dry weight due to muscle loss
  - Lingering myocardial suppression
  - Failure to reduce medications for changed EGFR
  - Medications inappropriately restarted
  - Medications not restarted
  - Residual injury and vulnerability
  - Lingering myocardial suppression

- Acute Kidney Injury
  - Recurrent microaspirations
  - Post pneumonitis pneumonitis
  - Deconditioning of compensatory muscles
  - Vulnerability to viral infections or pulmonary edema
  - Failure to resume inhaled or sub-optimal regimen

- CHF Exacerbation
  - Delirium
  - Permanent cognitive impairment
  - Post-intubation swallow dysfunction

- COPD Exacerbation
  - Delirium
  - Permanent cognitive impairment
  - Post-intubation swallow dysfunction

- Aspiration Pneumonia
  - Delirium
  - Permanent cognitive impairment
  - Post-intubation swallow dysfunction

Have you given them information about the Post-Intensive Care Syndrome?

**Restart / Titrate**

Stop

Anticoag

1st call for help

Priority Follow-Up

Lines out

List of lines

OT/PT

Financial Toxicity

Exercise

Big 5 Readmit

Info Sheet

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**What Is Post–Intensive Care Syndrome (PICS)?**

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.

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We’re all making this up together. Please email me at tiwashyn@umich.edu or connect on twitter @iwashyna for copies of my slides or to talk.

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