

LEVERAGING USABILITY HEURISTICS FOR ED ORDERSETS

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Vice-Chair for Clinical Operations
Rutgers – New Jersey Medical School
Medical Director, ED Observation Services
University Hospital, Newark



Disclosures

Order Sets in The ED

Orders

ED ADULT SEPSIS/SEPTIC SHOCK INITIAL ORDERS ↗

Do you need help with antibiotic selection? If yes please see link below. Please review past culture re: - EMPIRIC ANTIBIOTIC GUIDE FOR SEPSIS/SEPTIC SHOCK

▼ Nursing

▼ NURSING

- Saline lock
STAT, One time, today at 1300, For 1 occurrence
- Monitor patient for hypersensitivity reactions
STAT, One time, today at 1300, For 1 occurrence
- Cardiac monitoring
STAT, UNTIL DISCONTINUED, Starting today at 1300, Until Specified

▼ IV Fluids

Per guidelines suggested Fluid Bolus 30 ml/kg.

▼ IV Fluids

- Lactated Ringer's Bolus
30 mL/kg, at 999 mL/hr, ONCE
- sodium chloride 0.9 % iv infusion
30 mL/kg, at 999 mL/hr, Intravenous, ONCE

▼ Labs

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- PAIRED VBE WITH REPEAT IN 3 HOURS
 - Venous Blood Gas With Electrolyte
STAT, One time, today at 1300, For 1 occurrence
Release to patient: Immediate
 - Venous Blood Gas With Electrolyte
STAT, One time, today at 1600, For 1 occurrence
Release to patient: Immediate
- CBC With Auto Differential
STAT, One time, today at 1300, For 1 occurrence
Release to patient: Immediate
- Magnesium Serum (MG)
STAT, One time, Starting 4/7/23
- Comprehensive Metabolic Panel (CMP)
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STAT, One time, Starting 4/7/23
- D-Dimer (DDI)
STAT, One time, Starting 4/7/23

▼ Imaging

- ▶ Imaging

▼ Consults

- ▼ Consults
 - Consult to Patient and Family Support / Palliative Care
 - Consult to pulmonary/critical care
 - Consult to surgery trauma/critical care

▼ Medications - Pneumonia

- ▼ Community Acquired Preferred
 - Azithromycin IV + Ceftriaxone IV
- ▼ Healthcare Acquired: Possible Multidrug Resistant Organisms (MRDO) - Preferred Regimen (Including Aspiration Pneumonia)
 - Vancomycin IV + Zosyn IV
- ▼ Healthcare Acquired: Possible MDRO - Recent Piperacillin-Tazobactam Therapy For Greater Than 48 Hours
 - Vancomycin IV + Meropenem IV
 - Clindamycin IV (Add if suspected Toxic Shock Syndrome TSS)
- ▼ Severe IgE-Mediated Beta-Lactam Allergy (Anaphylaxis)
 - Consult to Allergy/Immunology (Page/Call Allergy/Immunology Service).**
Consult to Infectious Diseases(Page/Call Infectious Disease Service).
 - Levofloxacin IV + Vancomycin IV
 - Consults

▼ Medications - Intra-Abdominal Source

- ▶ Community Acquired - Preferred Regimen
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- ▶ Severe IgE - Mediated Beta-Lactam Allergy

▼ Medications - Complicated / Severe Clostridium Difficile Infection

- Presence of at least one: Shock, ileus, toxic megacolon.
- ▶ Severe, Complicated C. Difficile Infection

▶ Medications - Urinary Source

▶ Medications - Skin and Soft Tissue (SSTI)

▶ Medications - Febrile Neutropenia (ANC Less Than 500)

▶ Medications - Meningitis

▶ Medications - Unknown Source

▼ Additional Orders

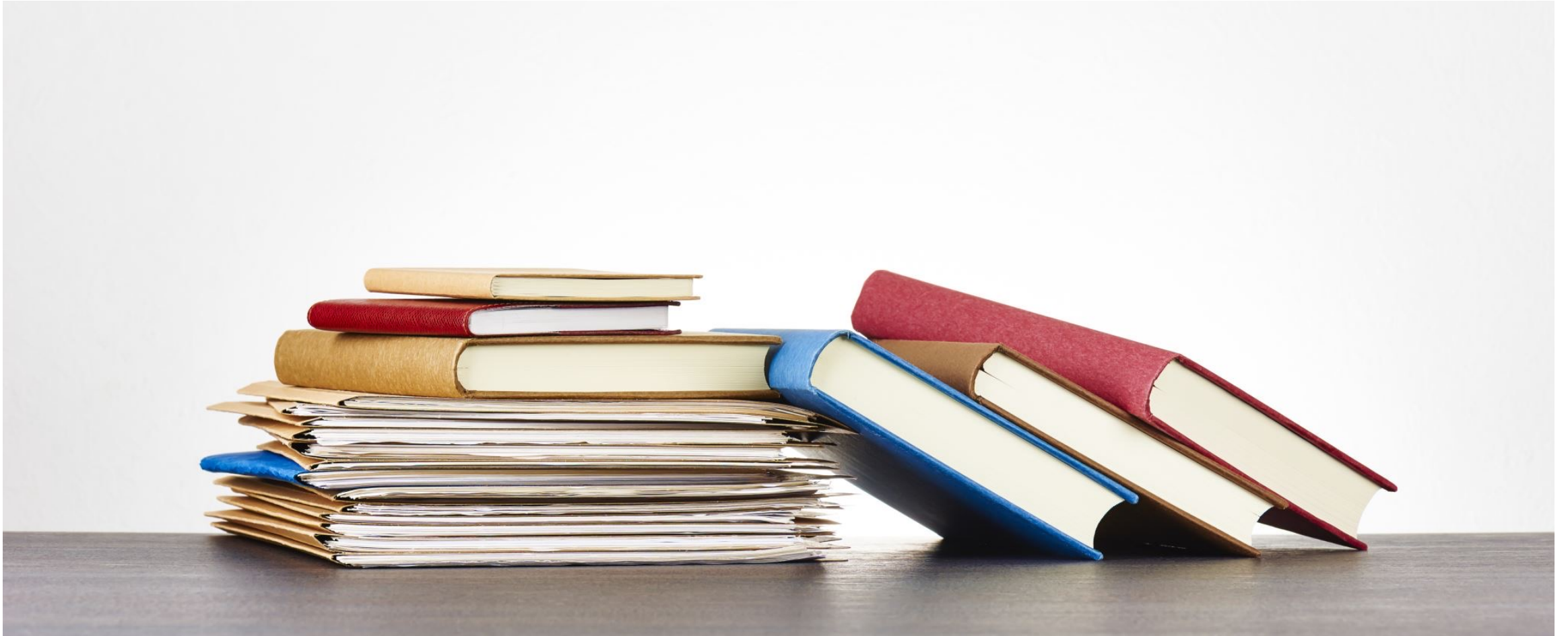
🔍 Search for additional order set orders

You can search for an order by typing in the header of this section.

Order Sets In the ED



The Laws of Order Sets



The Laws of Order Sets

1st Law:

Order Sets Should Adhere to The Usability Heuristics

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2nd Law:

Order Sets Should Be Phase of Care Agnostic

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2nd Law:

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3rd Law:

Order Sets Should Provide Clinical Decision Support

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Jakob Nielsen, 1994

Nielsen Norman Group

<https://www.nngroup.com/articles/ten-usability-heuristics>

The Usability Heuristics



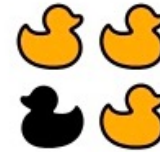
Visibility of
System Status



Match Between
System & Real World



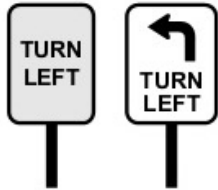
User Control
And Freedom



Consistency
And Standards



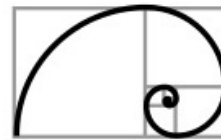
Error
Prevention



Recognition
Rather Than Recall



Flexibility And
Efficiency of Use



Aesthetic And
Minimalistic Design



Help Users
With Errors



Help And
Documentation

The Laws of Order Sets

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3rd Law:

Order Sets Should Provide Clinical Decision Support

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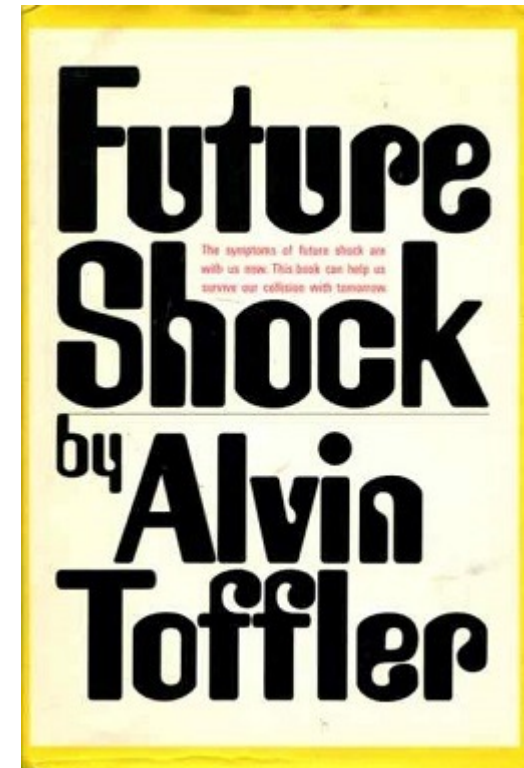
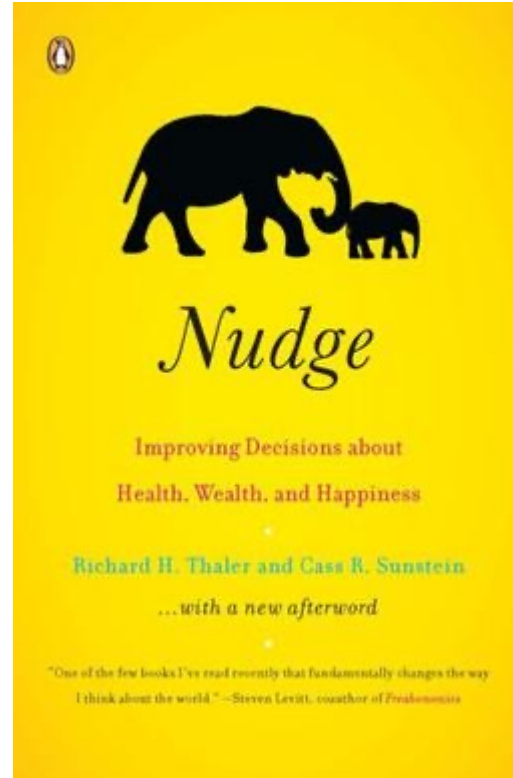
1st Correlate to the 3rd Law...

Clinical Decision Support should not require more cognitive effort than making the decision that it support...

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The Laws In Action

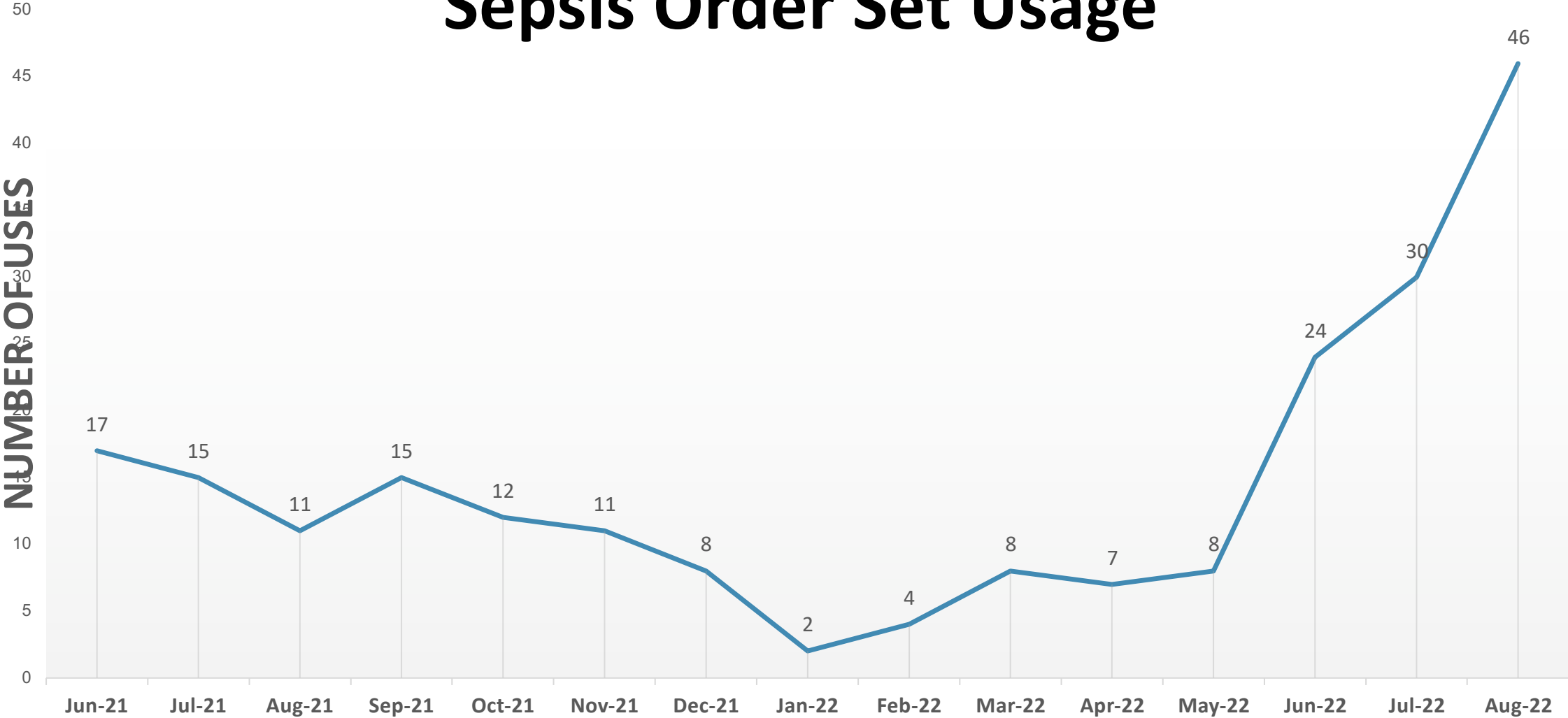
ED Sepsis Order Set 

- ▼ Sepsis Orders
 - ▼ Nursing Orders
 - Initial Nursing Orders
 - ▼ Labs & Studies
 - Initial Labs and Studies (Pre-checked)
 - Add-On Labs and Studies (Not Pre-checked)
 - ▼ IVF Management
 - Initial IVF Orders
 - ▼ Antibiotics - Source Based
 - Unknown/Critically Ill
 - Respiratory
 - Urinary
 - Intra-abdominal
 - CNS
 - ▼ Antipyretics
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- ▼ Additional Orders

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Sepsis Order Set Usage



Questions?