Clinical Frailty Scale in PAC

- Outcomes of 6-week inpatient rehabilitation
  - Balance
  - Functional exercise capacity
  - Strength
  - Mobility
  - Transfers

Table II. Changes in outcome measures from initial to final assessment (n = 32)[a].

	T1	T2	
Outcome measure	Median (IQR)	Median (IQR)	*p* Value
BBS (/56)	27 (22.5)	37 (15.5)	≤0.0001*
TUG (seconds)	59 (59)	40 (17.5)	≤0.0001*
6MWT (metres)	56 (55)	108 (70.5)	≤0.0001*
	Mean (SD)	Mean (SD)	
EQ-VAS (%)	61.25 (18.27)	72.5 (20.12)	=0.002*
BI (/100)	57.66 (20.32)	76.41 (19.35)	≤0.0001*
CFS (/7)	6.34 (0.48)	5.63 (0.66)	≤0.0001*

[a]Data presented for subjects who were available for T1 and T2 assessments (n = 32).
*Significant at the $p \leq 0.05$ level.
T1 = Assessment on admission to rehabilitation service, T2 = Assessment following 6 weeks of rehabilitation.
6MWT, 6-Minute Walk Test; BBS, Berg Balance Scale; BI, Barthel Index; CFS, Clinical Frailty Scale; EQ-VAS, EuroQol-Visual Analogue Scale; IQR, interquartile range; SD, standard deviation; TUG, Timed Up and Go.

Coleman et al. Disabil Rehabil 2012; 34: 1333-1338

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Frailty interventions in PAC

- Few studies evaluated interventions targeting frailty in PAC, with mixed results.
- Physical therapy / exercise program
  - Resistance training
  - Functional walking or balance training
- Deprescribing
- Little evidence on nutritional supplementation and social support, which does not mean lack of benefit; further research is warranted.

Roberts et al. PM R 2018; 10: 1211-1220

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Part 5: Recommendations

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JOURNAL OF CLINICAL ONCOLOGY COMMENTS AND CONTROVERSIES

Time to Stop Saying Geriatric Assessment Is Too Time Consuming

Marije E. Hamaker, *Diakonessenhuis, Utrecht, the Netherlands*
Tanya M. Wildes, *Washington University School of Medicine, St Louis, MO*
Siri Rostoft, *Oslo University Hospital and University of Oslo, Oslo, Norway*

Table 1. Comparative Cost of Nurse's Salary Compared With That of Other Diagnostic Instruments Used in Oncologic Workup

Diagnostic Instrument	Cost ($)
Nurse's salary for 1 hour*	28
Complete blood count	17
Carcinoembryonic antigen	50
Chest x-ray	67
Bilateral screening mammography	321
Abdominal or chest CT scan	640
MRI pelvis	739
Liver biopsy	879
Whole-body PET-CT	1,788
Colonoscopy with biopsy	2,187
Breast cancer genomic testing (Oncotype†)‡	3,416
Liquid biopsy (Guardant360§)‖	5,800

Hamaker et al. J Clin Oncol. 2017; 35: 2871-2874.

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Address barriers to assessment in routine care

Process	Barriers
Screening and assessment	! Time-related: lack of time, competing priority ! Clinic process: inadequate staffing, lack of standardized process ! Provider factors: reliance on patient or family report ! Patient factors: patient's impairments preventing assessment
Documentation	! EHR: long reminders and complicated templates ! Connection to clinical use: limited utility of the obtained information
Use of information to improve care	! Connection to patient outcomes: lack of meaningful metrics ! Accessibility of data: lack of standardized data location in EHR ! Provider knowledge of referrals and services

Nicosia et al. J Am Geriatr Soc 2019; 67: 493-502.

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Frailty assessment for transition of care

! Frailty is a key concept for understanding health status, estimating prognosis, and delivering individualized care in older adults.

! Adopt a brief standardized assessment (e.g., Clinical Frailty Scale) for clear communication of prognosis and treatment plan.
- " Hospital: document frailty status prior to hospitalization
- " PAC: comprehensive frailty assessment from a multidisciplinary team

! More research is needed on how frailty should be measured to enable individualized interventions to improve PAC outcomes.
- " Avoid therapeutic nihilism ("frailty ≠ no benefit from treatment")

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94-yo man with fall and fracture

! Fall, resulting in 4 rib fractures (concern for flail chest) and vertebral fracture

! PMH: multiple chronic conditions

! Prior to admission: use a rollator; ADLs independent; help with housekeeping

! Hospital course: pain control, tachycardia, fatigue, functional decline

! Discharged to rehab on hospital day #4

89-yo woman with pneumonia and AF

! Fell at home, unable to get up; pneumonia and new-onset AF with RVR

! PMH: multiple chronic conditions

! Prior to admission: live alone independently

! Hospital course: IV antibiotics, metoprolol and apixaban for AF, straight cath PRN for urinary retention, delirium

! Discharge to rehab on hospital day 12

Managing frail patients across care spectrum

Role	Clinical management	Hospital	Post-acute care	Community
Prognostication (*risk prediction*)	! Education about prognosis ! Goals of care discussion ! Social worker/case manager			
Risk stratification (*inform other disease management*)	! Prioritize chronic condition mgmt ! Relax disease target ! Medication reconciliation ! Deprescribing medications ! Minimize stressful interventions			
Target of intervention (*improve frailty per se*)	! Physical exercise ! Nutritional supplementation			

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Checklist for hospital and PAC providers

! Hospital providers
- ❑ Review prognosis and goals of hospitalization
- ❑ Medication reconciliation (to PAC)
- ❑ Minimize stressful interventions
- ❑ Early mobilization
- ❑ Geriatric consultation for co-management

! PAC providers
- ❑ Review prognosis and goals of PAC
- ❑ Medication reconciliation (to community)
- ❑ Modify chronic disease management (medication reduction, BP target, fatigue)
- ❑ Physical therapy, nutritional supplementation

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Pitfalls of Pills: ADEs & Transitions

Anita Vanka, MD, FHM, FACP

Kristen Knoph, PharmD, BCPS

Beth Israel Deaconess Medical Center

March 2020

Conflict of Interest Disclosure

- We have no financial relationships with a commercial entity producing healthcare-related products and/or services.

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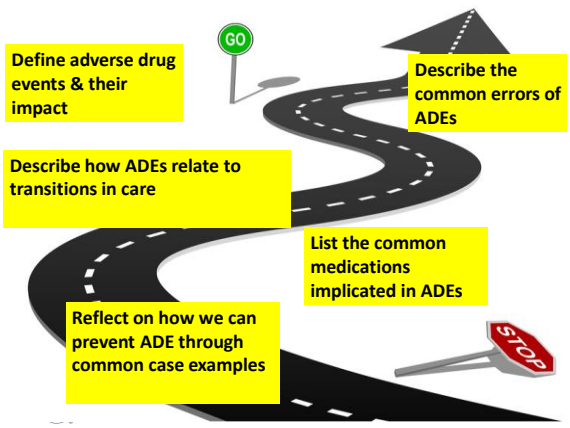

- Define adverse drug events & their impact
- Describe the common errors of ADEs
- Describe how ADEs relate to transitions in care
- List the common medications implicated in ADEs
- Reflect on how we can prevent ADE through common case examples

How do we define Transitions in Care?

Journal of the AMERICAN GERIATRICS SOCIETY

"Set of actions designed to ensure the coordination and continuity of health care as patients transfer between different locations or different levels of care within the same location"

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Coleman EA. Falling Through the Cracks: Challenges and Opportunities for Improving Transitional Care for Persons with Continuous Complex Care Needs. J Am Geriatr Soc 2003;51(4):549-555.

Prevalence of Post-hospital Transitions

- Hospitalized Medicare beneficiaries
  - 73% -> HOME
  - 17% -> SNF or Acute Rehab
  - 10% -> Different hospital or within the same hospital
- Number of transfers within 30 days
  - 61% single transfer
  - 18% two transfer
  - 8.5% three transfers
  - 4.3% four or more transfers

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Coleman E, Min S, Chomiak A, Kramer A. Posthospital Care Transitions: Patterns, Complications, and Risk Identification. Health Serv Res 2004;39(5):1449-1466.

Why is this important?

- Vulnerable time for patients
  - Shorter length of stay
  - Possible worsening of functional impairments
  - Discontinuities during their transitions
  - **Changes in treatment regimen**

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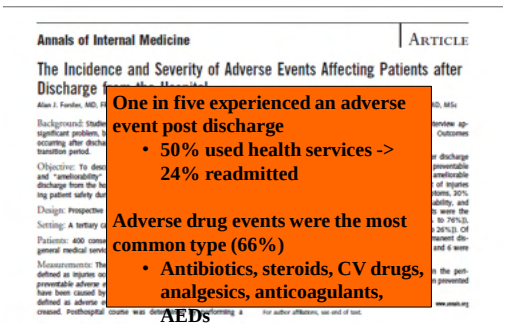
Annals of Internal Medicine | ARTICLE

The Incidence and Severity of Adverse Events Affecting Patients after Discharge

One in five experienced an adverse event post discharge

- **50% used health services -> 24% readmitted**

Adverse drug events were the most common type (66%)

- **Antibiotics, steroids, CV drugs, analgesics, anticoagulants, AEDs**

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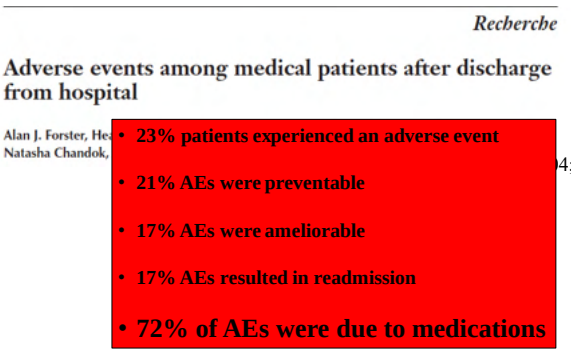
Recherche

Adverse events among medical patients after discharge from hospital

Alan J. Forster, He
Natasha Chandok,

- **23% patients experienced an adverse event**
- **21% AEs were preventable**
- **17% AEs were ameliorable**
- **17% AEs resulted in readmission**
- **72% of AEs were due to medications**

4;

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JGIM

ORIGINAL ARTICLES

Adverse Drug Events Occurring Following Hospital Discharge

Alan J. Forster, MD, FRCPC, MSc,[1] Harvey J. Murff, MD,[2] Josh F. Peterson, MD,[2] Tejal K. Gandhi, MD, MPH,[3] David W. Bates, MD, MSc[3]

[1]Division of General Internal Medicine and Ottawa Health Research Institute, University of Ottawa, Ottawa, Ontario, Canada; [2]Division of General Medicine, Vanderbilt University, Nashville, TN, USA; [3]Division of General Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA.

87% of ADEs associated with certain meds

Almost all cases associated with new med or dose change

Risk of ADE increased with number of medications prescribed

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ELSEVIER JAMDA journal homepage: www.jamda.com

Original Study

Medication Reconciliation in Continuum of Care Transitions: A Moving Target

Liron Danay Sinvani MD[a,*], Judith Beizer PharmD[a,b], Meredith Akerman MS[c], Renee Pekmezaris PhD[a,c,d,e,*], Christian Nouryan MA[a], Larry Lutsky PhD[f], Charles Cal RN, MS, MBA[f], Yosef Dlugacz PhD[a,f], Kevin Masick PhD[f], Gisele Wolf-Klein MD[a,d,e]

JAMDA 2013;14:668-67

Number of meds per patient increased with each transition: (6.5 -> 10.7 -> 12.6)

Average of 7.5 medication changes per patient per transition

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Medication discrepancies across multiple care transitions: A retrospective longitudinal cohort study in Italy

Marco Bonaudo[1]*, Maria Martorana[1], Valerio Dimonte[1], Alessandra D'Alfonso[2], Giulio Fornero[3], Gianfranco Politano[4], Maria Michela Gianino[1]

PLOS ONE | https://doi.org/10.1371/journal.pone.0191028 January 12, 2018

Results

Of 366 included patients, 25.68% had at least one discrepancy. The most frequent type of discrepancy was from medication omission (N = 74; 71.15%). Only discharge from a long-stay care setting (T4) was significantly associated with the onset of discrepancies (p = 0.045). When considering a lack of adequate documentation, not as missing data but as a discrepancy, 43.72% of patients had at least one discrepancy.

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Case Studies

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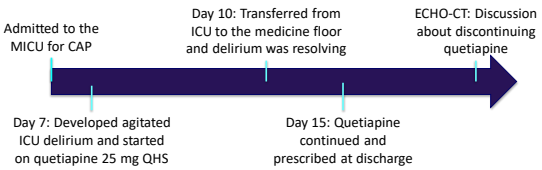
Patient Case

- 74 y/o F history of COPD, tobacco use, AF, CKD, depression who presented to the ED with SOB and hypoxia requiring intubation and mechanical ventilation



Antipsychotics

- Why is continuing an atypical antipsychotic medication on discharge an issue?
  - What are the consequences of long-term antipsychotic use?
- What can we do to prevent these ADEs?

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Antipsychotics

- Patients, especially the elderly, are at risk for developing delirium in the hospital
- Often started on antipsychotics (ie: quetiapine, olanzapine, haloperidol) for treatment
- Many consequences of long-term antipsychotic use:

Metabolic syndrome	Orthostasis
Increased falls risk	QTc prolongation
Urinary tract infections	Increased cost
Sedation	Increased risk of death in patients with dementia

- Due to potential long-term ADEs, the continued use of antipsychotics should be reevaluated

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Johnson KG et al. Discharge plans for geriatric inpatients with delirium: a plan to stop antipsychotics? J Am Geriatr Soc. 2017;65(10):2278-2281

Contents lists available at ScienceDirect
Journal of Critical Care
journal homepage: www.jccjournal.org

Implications of atypical antipsychotic prescribing in the intensive care unit☆

Bridgette L. Kram, PharmD*, Shawn J. Kram, PharmD, Kelli R. Brooks, MD
Duke University Hospital, DUMC Box 3089, Durham, NC, United States 27710

ARTICLE INFO
Keywords:
Delirium
Antipsychotic agents
Care transitions

ABSTRACT

84.2% of ICU survivors started on an antipsychotic had the medication continued on transfer from the ICU

28.6% received a prescription at hospital discharge

Patients who received a discharge prescription were more likely to be discharged to a location other than home (SNF, inpatient rehab)

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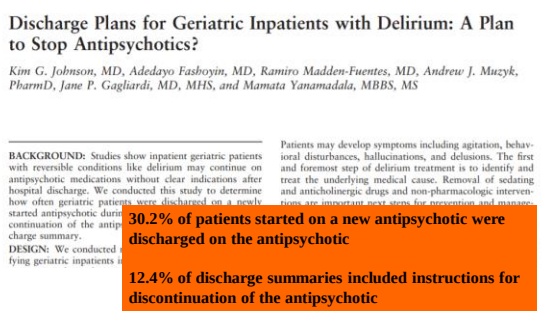

Discharge Plans for Geriatric Inpatients with Delirium: A Plan to Stop Antipsychotics?

Kim G. Johnson, MD, Adedayo Fashoyin, MD, Ramiro Madden-Fuentes, MD, Andrew J. Muzyk, PharmD, Jane P. Gagliardi, MD, MHS, and Mamata Yanamadala, MBBS, MS

BACKGROUND: Studies show inpatient geriatric patients with reversible conditions like delirium may continue on antipsychotic medications without clear indications after hospital discharge. We conducted this study to determine how often geriatric patients were discharged on a newly started antipsychotic during continuation of the antipsychotic charge summary.

DESIGN: We conducted a fying geriatric inpatients

Patients may develop symptoms including agitation, behavioral disturbances, hallucinations, and delusions. The first and foremost step of delirium treatment is to identify and treat the underlying medical cause. Removal of sedating and anticholinergic drugs and non-pharmacologic interventions are important next steps for prevention and manage-

30.2% of patients started on a new antipsychotic were discharged on the antipsychotic

12.4% of discharge summaries included instructions for discontinuation of the antipsychotic

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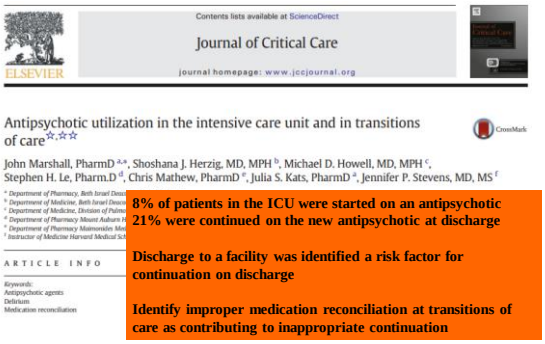

Contents lists available at ScienceDirect

Journal of Critical Care

journal homepage: www.jccjournal.org

ELSEVIER

Antipsychotic utilization in the intensive care unit and in transitions of care☆,☆☆

CrossMark

John Marshall, PharmD [a,*], Shoshana J. Herzig, MD, MPH [b], Michael D. Howell, MD, MPH [c], Stephen H. Le, Pharm.D [d], Chris Mathew, PharmD [e], Julia S. Kats, PharmD [a], Jennifer P. Stevens, MD, MS [f]

[a] Department of Pharmacy, Beth Israel Deaconess Medical Center
[b] Department of Medicine, Beth Israel Deaconess Medical Center
[c] Department of Medicine, Division of Pulmonary
[d] Department of Pharmacy Mount Auburn Hospital
[e] Department of Pharmacy Maimonides Medical Center
[f] Instructor of Medicine Harvard Medical School

ARTICLE INFO

Keywords:
Antipsychotic agents
Delirium
Medication reconciliation

8% of patients in the ICU were started on an antipsychotic
21% were continued on the new antipsychotic at discharge

Discharge to a facility was identified a risk factor for continuation on discharge

Identify improper medication reconciliation at transitions of care as contributing to inappropriate continuation

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Patient case

- 83 y/o F with history of chronically dislocated left THA presenting to BIDMC for removal of the left THA implant and girdlestone procedure
  - Discharge plan to take aspirin 81 mg BID for DVT prophylaxis and pantoprazole 40 mg daily for GI upset for 4 weeks after surgery
  - ECHO-CT conference
    - Discussed adding a stop date to pantoprazole order

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Proton Pump Inhibitors (PPIs)

- Why is continuing PPIs on discharge an issue?
- What are the consequences of long-term PPI use?
- What can we do to prevent these ADEs?

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Proton Pump Inhibitors (PPIs)

- PPIs are acid-suppressive medications used to treat GI symptoms such as acid reflux and heartburn
- PPIs may be prescribed in the hospital for various reasons (stress ulcer prophylaxis, GI bleed) including continuing a patient's home medications
- PPIs have been considered safe medications, but recent research has shown they are associated with several ADEs

Increased fracture risk	*C. difficile* infection
Diarrhea	Pneumonia
Vitamin B12 deficiency	Hypomagnesemia
Rebound acid hypersecretion	Increased cost

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Heidelbaugh JJ et al. Overutilization of proton-pump inhinitors: what the clinician needs to know. Ther Adv Gastroenterol. 2012;5(4):219-232

Longitudinal Analysis of the Costs Associated with Inpatient Initiation and Subsequent Outpatient Continuation of Proton Pump Inhibitor Therapy for Stress Ulcer Prophylaxis in a Large Managed Care Organization

Lisa Thomas, PharmD; Eric J. Culley, PharmD, MBA; Patricia Gladowski, RN, MSN; Vickie Goff, BS; John Fong, MD, MBA; and Sarah M. Marche, PharmD

ABSTRACT

BACKGROUND: Proton pump inhibitor (PPI) therapy is commonly initiated in hospitals for a variety of reasons including stress ulcer prophylaxis. Outpatient use of inpatient-initiated PPI use may be medically unwarranted.

OBJECTIVE: To (a) describe in a longitudinal analysis the incidence and reasons for hospital initiation of PPI therapy, (b) identify the proportion of members continued on PPI therapy at hospital discharge that is not medically warranted, and (c) estimate the total costs incurred by the managed care organization (MCO) and its members due to inappropriate continuation of hospital-initiated PPI therapy after discharge.

METHODS: A retrospective review of de-identified medical c... claims was performed to identify commercial and Medicare... an acute care hospital admission and subsequent discharge... January 1, 2003, through December 31, 2006, in an MCO w... mately 2.5 million members with medical and prescription ... Hospital-initiated PPI therapy was assumed based on the presence of a paid pharmacy claim for a PPI within the 30-day period following hospital discharge. All patients who during the study period had (a) no PPI claims ... regarding medication reconciliation in general, and regarding continuation of PPI therapy specifically, is needed to increase responsible post-discharge medication utilization.

J Manag Care Pharm. 2010;16(2):122-29

What is already known about this subject

- According to the Dear Jrend Report by the pharmacy benefits ... for stress ulcer prophylaxis (SUP), the use of PPIs for this specific indication is questionable because of lack of institutional guidelines regarding this subject.

68.8% were prescribed a PPI inappropriately at hospital discharge

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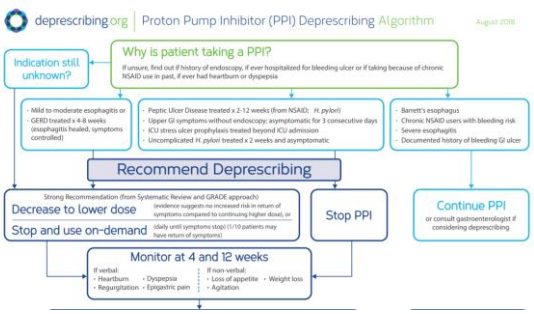

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Patient Case

- 55 y/o F presented to BIDMC with abdominal wall cellulitis and drainage with concern for necrotizing fasciitis
  - Underwent multiple surgeries including wound vac placement
  - Discharged on large opioid requirement (50-60 mg oxycodone/day)
  - ECHO-CT: discussion about taper down opioid medications as tolerated and monitoring for bowel movements

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Opiates and Sedatives

- What are some challenges managing patients on opiates and other sedatives (i.e. benzodiazepines) in transitions of care?
- What can we do to prevent these ADEs?

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Opiates and Sedatives

- An estimated 20% of patients presenting to physician offices for non-cancer pain receive a prescription for opioid pain medication
- Although opioids are effective for pain control, they are associated with serious ADEs
- Older adults are more susceptible to ADEs
- Healthcare providers can ensure patients prescribed opioids and other sedatives are taking the lowest effective dose for the shortest duration possible

Respiratory suppression	Constipation
Dizziness	Tolerance
Sedation	Physical dependence
Nausea/vomiting	Increased falls risk

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Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain- United States, 2016. JAMA. 2016;315(15):1624-45

Opiate Prescribing in Hospitalized Older Adults: Patterns and Outcomes

Sutapa Maiti, MD,[±] *Liron Sinvani, MD,*[±] *Michele Pisano, PharmD,*[†] *Andrzej Kozikowski, PhD,*[†] *Vidhi Patel, MS, MBA,*[†] *Meredith Akerman, MS,*[‡] *Karishma Patel, MD,*[*] *Christopher Smilios, MPH,*[†] *Christian Nouryan, MS,*[†] *Guang Qiu, MD,*[†] *Renee Pekmezaris, PhD,*[†] *and Gisele Wolf-Klein, MD*[*†]

13% of patients received opiates prior to hospital admission and 5% received opioids while inpatient

87% did not receive opiates prior to admission and 22% received opiates while inpatient

Older adults with any opiate exposure was associated with poor outcomes, including longer hospital stay, and 30 day readmissions

BACKGROUND/OBJECTIVE ing patterns have been well emergency department settings in hospitalized older adults. T patterns of opiate prescribing hospitalized older adults.
DESIGN: Retrospective cohor
SETTING: Tertiary care facil
PARTICIPANTS: Hospitalize and older (N = 9,245; meat 72.3% white, 90.8% non-His
MEASUREMENTS: Opiate action, concurrent use of pote tions (PIMs), adverse events, discharge disposition, length of stay (LOS), and 30-day readmissions

Healthcare providers face the complexity of managing multiple coexisting chronic conditions, including pain syn-

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The Burden of Opioid-Related Adverse Drug Events on Hospitalized Previously Opioid-Free Surgical Patients

Richard D. Urman, MD, MBA,[*†‡] *Diane L. Seger, RPH,*[§||] *Julie M. Fiskio, BS,*[§||] *Bridget A. Neville, MPH,*[§] *Elizabeth M. Harry, MD,*[‡§] *Scott G. Weiner, MD, MPH,*[‡¶] *Belinda Lovelace, PharmD,MS,*[**] *Randi Fain, MD,*[††] *Jessica Cirillo, MHS,*[**] *and Jeffrey L. Schnipper, MD, MPH*[‡§]

Objective: Opioid analgesics are a mainstay for acute pain management, but postoperative opioid administration has risks. We examined the prevalence, risk factors, and consequences of opioid-related adverse drug events (ORADEs) in a previously opioid-free surgical population.
Methods: A retrospective, observat tive, billing, clinical, and medication tals. Data were collected for all ad admission, underwent surgery betwe 30, 2016, and received postoperative mined based on inpatient billing codes oxone. We determined independent using multivariable logistic regression tality, hospital costs, length of hospita mission within 30 days for patients w
Results: Among 13,389 hospitaliza single qualifying surgery, 12,218 (91

Key Words: opioids, surgery, complications, side effects, outcomes, morbidity, postoperative

(*J Patient Saf* 2019;00: 00–00)

91% of opioid-naive patients who had surgery received post-op opioids

Of those, 9.1% had an opioid-related ADE

Predictors of opioid-related ADEs included older age, disease severity, longer surgeries, and concurrent benzodiazepine use

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Pearls to Avoid Pitfalls

- Patients are at high risk of medication ADEs during transitions of care
  - Antipsychotics, proton pump inhibitors, and opioids
- Critical to be clear regarding end dates and/or taper instructions to the next provider
- Medication reconciliation at transitions of care can help to decrease overprescribing and medication-related ADEs

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Following a Pandemic through Post-Acute Care

Zahir Kanjee, MD, MPH, FACP

Anita Vonka, MD, FHM, FACP

Beth Israel Deaconess Medical Center

August 2020

Learning Objectives

Define	Define the prevalence of COVID globally, nationally, and locally
Recognize	Recognize the societal level impact of the pandemic
Describe	Describe common complications of COVID in hospitalized patients
List	List the current recommendations for monitoring and management for patients who had COVID
Reflect on	Reflect on how we can manage patients post discharge after being hospitalized for COVID

Conflict of Interest Disclosure

We have no financial relationships with a commercial entity producing healthcare-related products and/or services.

COVID-19

- Novel coronavirus as cause of PNA identified in Wuhan -> rapid spread throughout China -> global spread
  - RNA virus, related to SARS and MERS virus
  - Entry mediated by ACE2 on host cells
- WHO designates this as COVID-19 in Feb 2020
  - Virus causing COVID-19 known as SARS-CoV-2
  - More than 19 million confirmed cases of COVID-19 globally
- WHO declares this as a pandemic in March 2020

Global Cases

U.S. Cases

COVID-19

- Transmission risk – incomplete understanding
  - Person-to-person: respiratory droplets (<6 feet), contaminated surfaces, airborne (unclear)
  - Viral shedding: prior to development of symptoms (2-3 days) -> highest in early course of illness (within 7 days)
  - Can occur from asymptomatic individuals
  - Risk dependent on exposure type: increases with closeness and duration of the contact

COVID-19

- Immunity
  - Humoral: emerging data, magnitude & durability uncertain
  - Cell-mediated: potential for durable T-cell immune response
  - Protective immune response?
    - Animal studies suggest some protection against reinfection in short term
    - Lower levels or more rapid clearance of virus following challenge

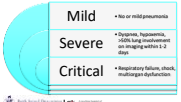
Risk factors for Severity

Established
- Cardiovascular disease
- Type I DM
- COPD
- Cancer
- Chronic kidney disease
- Obesity
- Sickle cell disease
- Solid organ transplant state

Possible
- Tobacco use
- HTN
- Asthma (mod-severe)
- Cystic fibrosis
- Cerebrovascular disease
- Liver disease
- Pregnancy
- Pulmonary disease
- Immunocompromised state
- Type II DM

Accessed virology.gov

Spectrum of infection



Greatest impact of COVID-19

- As of June 2020:
  - Nearly 22% and 34% of COVID-19 cases in the U.S. are in African Americans and LatinX communities
- Mortality rate from COVID-19 is two-fold higher in African Americans compared to White persons
- Native Americans disproportionately affected
  - 18% deaths in AZ (make up 5% of the state population)

Why these disparities?

Biomedical lens

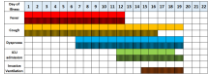
- Increased prevalence of chronic disease in African Americans: DM, HTN, obesity, CAD
- Lower access to healthcare: uninsured, areas with lower quality/frequency of medical care

SDH lens

- Higher poverty rates in Native Americans, African Americans, Latinx
  - Frontline jobs, public transportation, essential workers, fewer options to work from home
- Living conditions
  - Higher housing density, more likely to live in areas lack of potable water, and more multigenerational households
- Knowledge gaps
  - Health literacy, LEP, justifiable mistrust of healthcare systems

Mahajan et al. Clin Infect Dis. 2020 Jun 20

COVID in the Hospital: Disease Complications--pulmonary



Kalambaden et al. Cureus 2020

COVID in the Hospital: Case

AA is a 63yom w HTN, CAD, COPD, obesity who p/w 5d malaise/fever after his husband came down with COVID 19. In the last day, he has had worsening DOE. Vital signs in ED notable for HR 105, O2 sat 91% on 3L NC (83% on RA). CXR with bilateral infiltrates.

Which COVID complication are we most worried about here?

COVID in the Hospital: Case

He is admitted with severe COVID pneumonia. He requires oxygenation, avoidance of nebulized medications **(why?)**, consolidation of medications and parsimonious diagnostic testing for infection control.

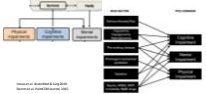
What medications are indicated at this point?

COVID in the Hospital: Medical Management

- remdesivir
- dexamethasone
- ? CAP abx

- no specific contraindication to NSAIDs or ACE/ARBs

PICS and COVID



COVID in the Hospital: Case

AA's oxygenation is stable for a couple days, but then worsens abruptly, necessitating prolonged intubation and aggressive sedation/paralysis.

What complications of critical care treatment should we be worried about in the medium to long term?

COVID in the Hospital: Case

He develops a VAP but eventually improves. Sedation is weaned and he is eventually extubated. Throughout hospitalization, team involves family remotely, implements aggressive PICS-supportive care, and enrolls him in a PICS prospective observational/supportive cohort study.

What other organ systems could COVID affect this hospitalization?

COVID in the Hospital: Complications--thrombosis

- Abnormal coagulation studies
- Prophylaxis (some get therapeutic dosing, maybe even on discharge)
- Treatment (maybe longer?)
- Abnormal locations

COVID in the Hospital: Complications--others

- Cardiac:
  - arrhythmias (fib/flutter, VT)
  - myocardial injury (myocarditis, hypoxic injury, stress, CAD, R heart strain, cytokines)
- AKI

COVID in the Hospital: Case

Though there is no apparent thrombosis, he is started on aggressive prophylactic VTE ppx (enoxaparin 40mg BID).

What other COVID-associated organ damage should we watch for?

COVID in the Hospital: Case

He receives very careful fluid resuscitation to resolve ATN. Troponin is non-specifically elevated, he is kept on telemetry without events.
He is discharged to post-acute care for aggressive rehabilitation.

What are the priorities now? How can we work together to improve AA's outcomes?

Post-COVID Hospitalization

- Respiratory/dyspnea, deconditioning
- Post intensive care syndrome (PICS)
  - Psychiatric
  - Cognitive
  - Functional
- Social (including isolation), financial
- Delirium
- Infection control, including rationalizing medications and minimizing transfers

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Questions?

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Learning Objectives

Define	Define the prevalence of COVID globally, nationally, and locally
Recognize	Recognize the societal level impact of the pandemic
Describe	Describe common complications of COVID in hospitalized patients
List	List the current recommendations for monitoring and management for patients who had COVID
Reflect on	Reflect on how we can manage patients post discharge after being hospitalized for COVID

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