Transitions of Care Pharmacist Services in the Psychiatric Population:

Findings of a Six-Week Transitions of Care Pilot at Sharp Mesa Vista Hospital

Nada Abou-Karam, PharmD
PGY-2 Resident Pharmacist in Transitions of Care
Sharp HealthCare and Touro University

Objectives

- Define and Transitions of Care (ToC) and describe ToC pharmacist services
- Explain the goals of the ToC pharmacist service at Sharp Mesa Vista
- Quantify and characterize the types of services and interventions performed during a six-week ToC pilot
- Recommend next steps for optimizing medication management around transitions of care

Transitions of Care[1]

- *"Movement of patients between health care locations, providers, or different levels of care within the same location as their conditions or care needs change."*

-National Transitions of Care Coalition

ToC in the Psychiatric Population

- ToC model development and intervention testing
  - Significantly less in mental health vs. general medical care[2]
- Future readmissions measures and penalties may include psychiatric facilities

Medications and Transitions of Care

- Greater than 50% of documented medication errors occur at three times: admission, transfer, discharge[3]
- Medication management
  - Key component of Transitions of Care (ToC) initiatives

Medications and Transitions of Care

- ED visits due to ADEs[4]
  - ~89,000 annually due to psychiatric medications
    - ~10% of all adult ADE ED visits
    - ~19% result in hospitalization
    - Excludes: intentional self-harm, drug abuse, withdrawal, non-adherence

Sharp Mesa Vista ToC Pilot

- May 3rd, 2015 – June 12th, 2015
  - M & Th: 0700 – 1530 hrs
  - T,W,F: 0800 – 1630 hrs
- Senior Behavioral Health Center (SBHC)
  - Formerly Older Adult Persons (OAP) unit
  - Opened May 9th, 2015

Senior Behavioral Health Center

HASD&IC @HASDIC · May 7

Ribbon cutting of Sharp Mesa Vista Hospital's Senior Behavioral Health Center. @sharphealthcare @DaveRobertsSD

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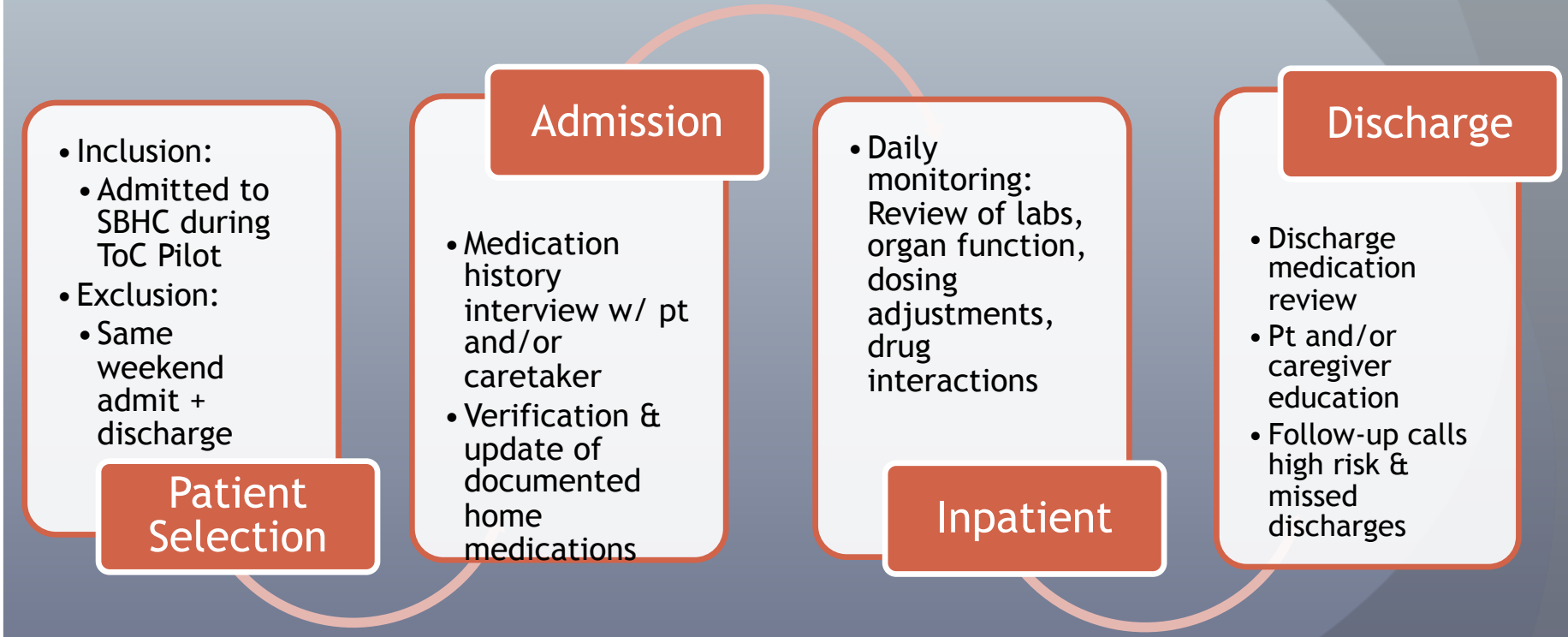
View photo

https://twitter.com/hasdic

Sharp Mesa Vista ToC Pilot: ToC Pharmacist Workflow



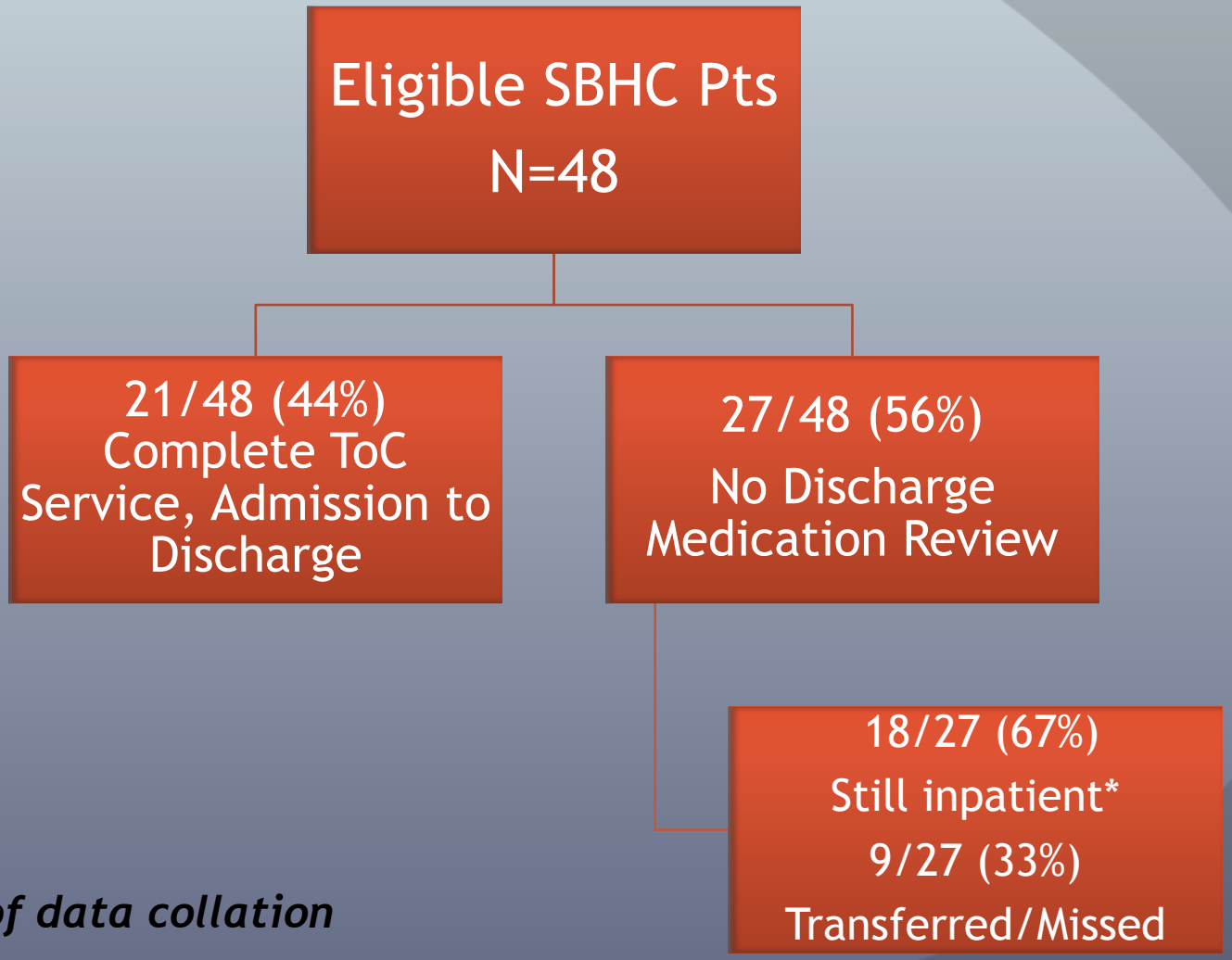
Sharp Mesa Vista ToC Pilot

- PGY-2 ToC Pharmacist activities:
  - Attendance at bi-weekly SBHC Treatment Team
  - Identification of potential drug therapy problems (DTPs)
  - Communication of recommendations to managing clinicians

Sharp Mesa Vista ToC Pilot

- PGY-2 ToC Pharmacist activities (continued):
  - Provision of drug information and drug therapy recommendations as requested by RNs and physicians
  - Provision of educational in-services to RNs and staff

Patients Receiving ToC Service



**At time of data collation*

Patient Characteristics (N=48)

Age	
Mean (range)	72.7 (50-91)
≥ 80 yrs – N (%)	10 (20.8%)
< 65 yrs – N (%)	5 (10.4%)
Comorbidities, Mental - N (%)	
Depression	23 (48%)
Generalized anxiety dx.	8 (17%)
Bipolar disorder	14 (29%)
Schizophrenia	10 (21%)
Dementia/suspected dementia – N (%)	15 (31%)
Active substance abuse – N (%)	14 (29%)

Patient Characteristics (N=48)

Comorbidities, Medical - N (%)	
Diabetes Type II	12 (25%)
Hypertension	28 (58%)
Hyperlipidemia	16 (33%)
CAD	7 (15%)
CHF	6 (13%)
Atrial fibrillation	7 (15%)
Stroke	4 (8%)
Medication count at admit	
Mean (range)	8.9 (0-22)
≥ 10 - N (%)	17 (35%)
≥ 15 - N (%)	7 (15%)

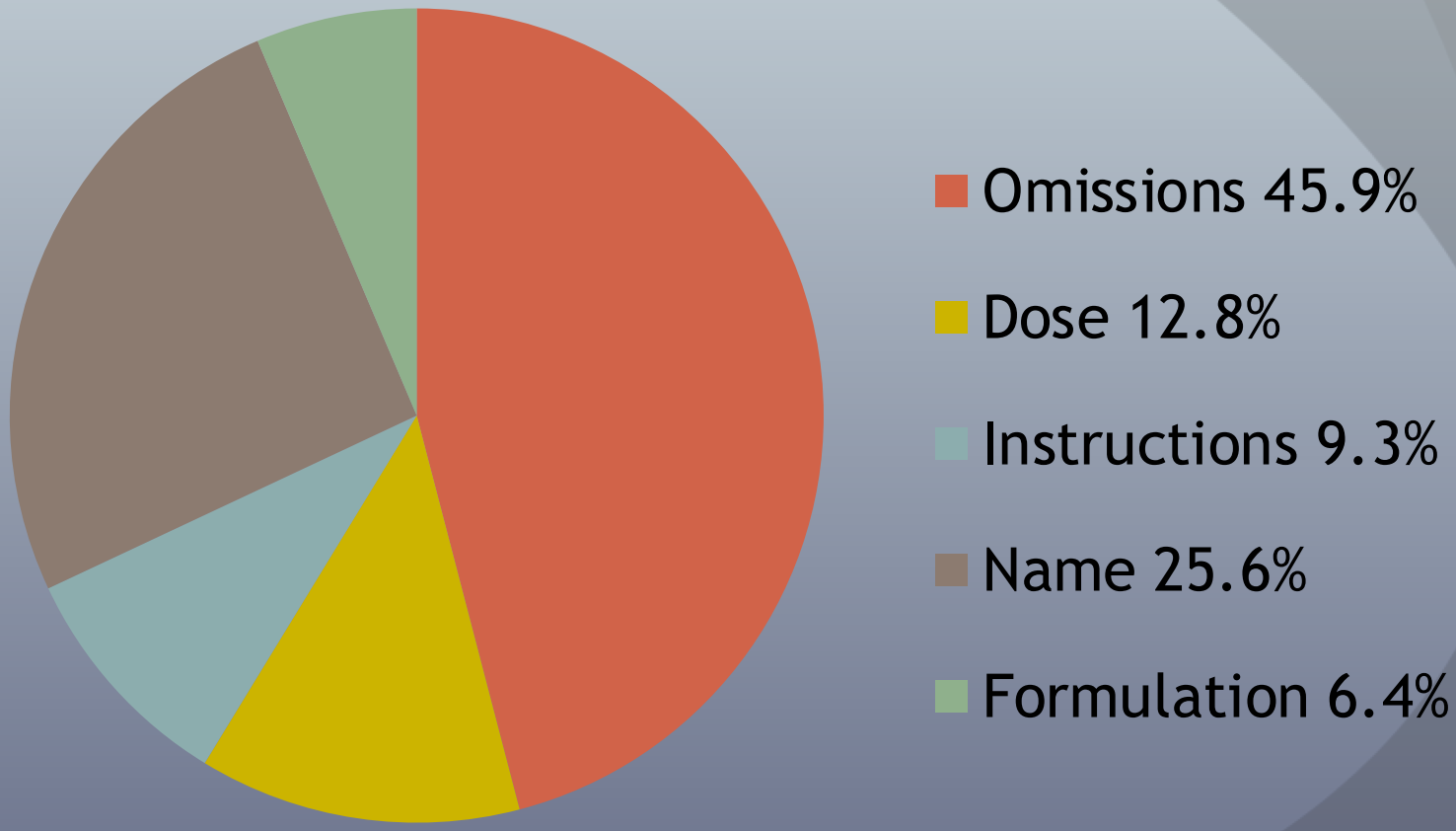
Errors Identified Upon Review of Admission Medication History

Medication lists containing ≥ 1 error – N (%)	38/48 (**79%**)
# Errors/list – Mean (range)	**5.7** (1-22)

Errors Identified Upon Review of Admission Medication History

	Sharp Memorial – CHF N=128 pts	Sharp Memorial – Trauma N=40 pts	Sharp Mesa Vista – SBHC N=48 pts
Medication lists containing ≥ 1 error – N (%)	91 (**71%**)	34 (**85%**)	38 (**79%**)
# Errors/list – Mean	**3.6**	**3.3**	**5.7**

Types of Errors Identified



Patient CF: Initial Home Medication List

- amlodipine 5 mg PO daily, HTN
- aspirin 81 mg PO daily, stroke prevention
- clotrimazole 10 mg PO 5x daily, antifungal
- ezetimibe 10 mg PO daily, cholesterol
- gabapentin 100 mg PO BID, peripheral neuropathy
- hydrochlorothiazide 12.5 mg PO daily, HTN
- lamotrogine 100 mg PO BID, mood
- meloxicam 15 mg PO daily, pain
- metroprolol succinate 25 mg PO BID, HTN
- nitrofurantoin 100 mg PO BID, UTI
- olanzapine 5 mg PO QHS, antipsychotic
- pantoprazole 40 mg PO daily, ulcer prevention
- paroxetine 10 mg PO daily, depression
- raloxifene 60 mg daily, osteoporosis osteoporosis
- simvastatin 10 mg PO QHS, cholesterol
- solifenacin 5 mg PO daily, overactive bladder
- valsartan-HCTZ 160-12.5 mg PO daily, HTN
- venlafaxine 75 mg PO daily, depression

Patient CF: Updated Home Medication List

- amlodipine 5 mg PO daily, HTN
- aspirin 81 mg PO daily, stroke prevention
- ~~clotrimazole 10 mg PO 5x daily, antifungal~~
- ~~ezetimibe 10 mg PO daily, cholesterol~~
- gabapentin 100 mg PO ~~BID~~ QID, peripheral neuropathy
- hydrochlorothiazide 12.5 mg PO daily, HTN
- lamotrogine 100 mg PO BID, mood
- meloxicam 15 mg PO daily, pain
- Metroprolol ~~succinate~~ tartrate 25 mg PO BID, HTN
- ~~nitrofurantoin 100 mg PO BID, UTI~~
- olanzapine 5 mg PO ~~QHS~~ BID, antipsychotic
- pantoprazole 40 mg PO daily, ulcer prevention
- ~~paroxetine 10 mg PO daily, depression~~
- ~~raloxifene 60 mg daily, osteoporosis~~
- simvastatin 10 mg PO QHS, cholesterol
- ~~solifenacin 5 mg PO daily, overactive bladder~~
- ~~valsartan-HCTZ 160-12.5 mg PO daily, HTN~~
- venlafaxine XR 75 mg PO daily, depression
- glipizide 10 mg PO BID, diabetes
- oxybutynin ER 15 mg PO daily, overactive bladder

Patient RA

- HPI: Increasing schizophrenic behavior several weeks including: lighting fires, not sleeping, increasing auditory and visual hallucinations
- Hx: schizophrenia, previous hospitalizations x 4 in past 2.5 months, past suicide attempt, rheumatoid arthritis, hypertension, GERD, allergic rhinitis

Patient RA:
Initial Home Medication List

- hydrocodone-acetaminophen 10-325 mg PO Q6H prn, pain
- losartan 100 mg PO daily
- lurasidone 30 mg PO daily, depression
- methotrexate 2.5 mg, 1 tab PO weekly, maintenance treatment 4 tabs
- metoprolol 25 mg PO BID, hypertension
- pantoprazole 40 mg PO daily, GERD
- prednisone 20 mg PO daily, pain

Patient RA: Updated Home Medication List

- hydrocodone-acetaminophen 10-325 mg PO Q6H prn, pain
- losartan 100 mg PO daily, hypertension
- lurasidone ~~30~~ 80 mg PO daily, ~~depression~~ schizophrenia
- methotrexate 2.5 mg, ~~1~~ 4 tab = 10 mg PO ~~weekly~~ Q Tuesday, ~~maintenance treatment 4 tabs,~~ rheumatoid arthritis
- metoprolol tartrate 25 mg BID, hypertension
- pantoprazole 40 mg PO daily, GERD
- prednisone ~~20~~ 5 mg PO daily, ~~pain~~ rheumatoid arthritis
- folic acid 1 mg Qday

Patient RA

- Physician informed of medication history updates
  - Verbal recommendation vs CERNER communication
- Recommended changes made to inpatient orders:
  - Prednisone decreased
  - MTX increased
  - Folic Acid added

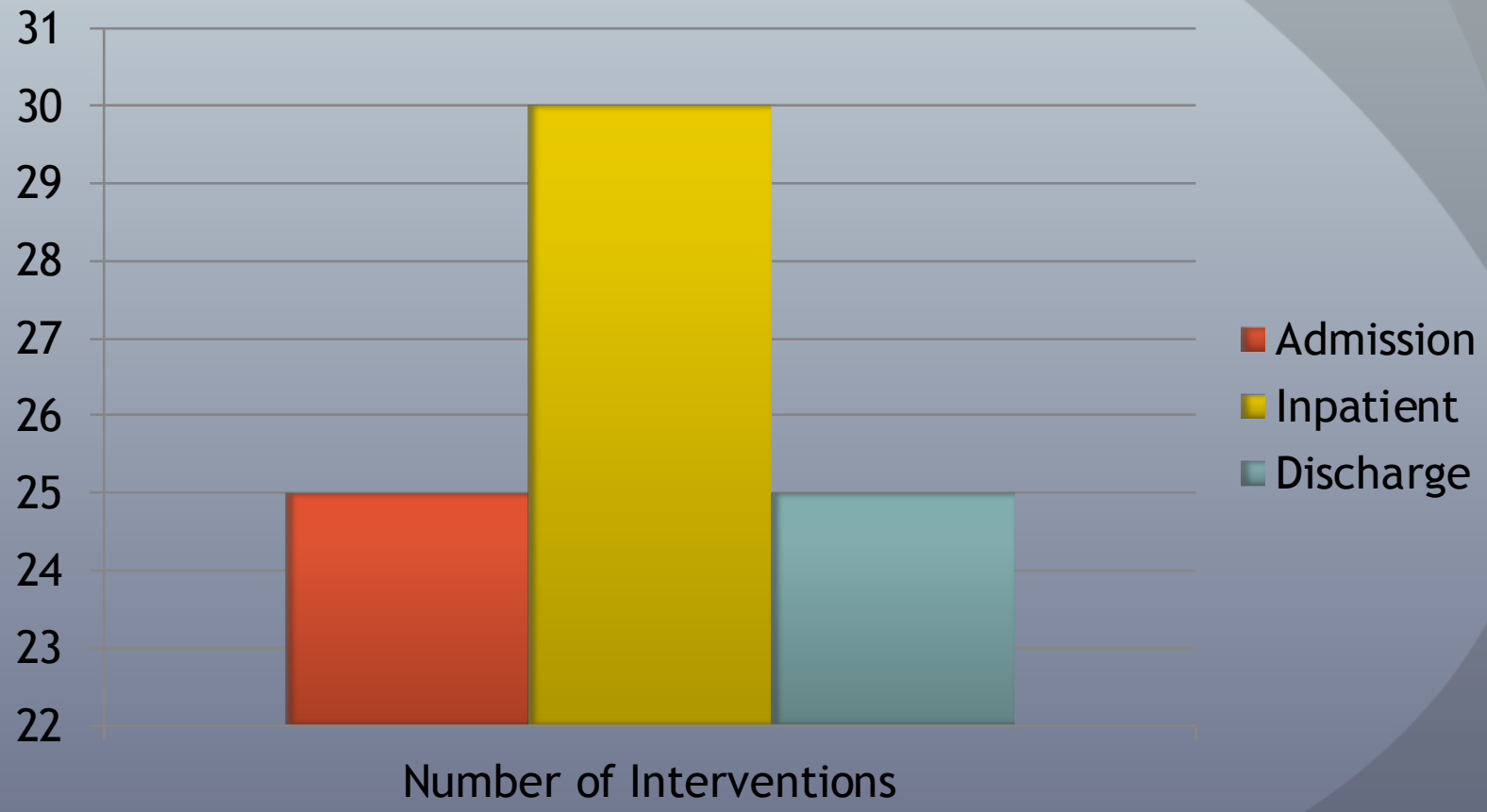
Patient RA

- Potential consequences of medication errors:
  - Further exacerbation of schizophrenia w/ prednisone dose increase x 4?
  - Exacerbation of RA with MTX dose decrease by 3/4?
  - If prolonged LOS, increased risk of MTX side effects w/out folic acid?
    - Ex: stomatitis, GI intolerance, bone marrow toxicity, abnormal LFTs

Drug Therapy Problems Identified and Interventions Performed

- 86 potential drug therapy problems (DTPs) identified
  - Avg. 1.8 DTP/patient
  - Post-admission; excludes errors corrected in home medication history
- 80/86 (93%) of recommendations to address DRPs accepted

Interventions Performed by Stage of Care



Types of Interventions Performed

Intervention Type	N (%)
Add medication	28 (35%)
Discontinue medication	15 (18.8)
Order lab	12 (15%)
Discontinue duplicate	8 (10%)
Increase dosage	7 (8.8%)
Decrease dosage	7 (8.8%)
Modify instructions	1 (1.3%)
Generate Outpatient Rx	1 (1.3%)
Discontinue Outpatient Rx	1(1.3%)

Example “Depart” Problems Identified

- Mismatches between “depart” patient instructions and Rxs
  - Most common: Rx medication present on depart, no Rx
- Omissions of indicated home medications
  - Example resultant ADE:
    - Episodes of hypertensive urgency throughout patient stay
  - Potential ADE avoided by medication restart:
    - Hypertensive emergency, possible stroke post-discharge

Example “Depart” Problems Identified

- Unintentional omissions of new medications initiated during inpatient stay
  - Example:
    - Thiamine, folic acid, and MVI in recent Wernicke’s encephalopathy
  - Potential ADE avoided by medication continuation:
    - Irreversible neurological damage

Duplicate Therapy & Conflicting Instructions

Final Med List
aspirin (aspirin 81 mg oral delayed release tablet) 1 Tablet(s), Oral, DAILY
aspirin 81 Milligram, Oral, DAILY, **Indication:** cardiac
benztropine (benztropine 1 mg oral tablet) 1 Tablet(s), Oral, 3 TIMES A DAY
benztropine 1 Milligram, Oral, 3 TIMES A DAY, **Indication:** mood
busPIRone (busPIRone 5 mg oral tablet) 1 Tablet(s), Oral, 2 TIMES A DAY
busPIRone 5 Milligram, Oral, 3 TIMES A DAY, **Indication:** mood
clopidogrel (clopidogrel 75 mg oral tablet) 1 Tablet(s), Oral, DAILY
clopidogrel 75 Milligram, Oral, DAILY, **Indication:** prophylaxis
docusate (docusate 10 mg/mL oral liquid) 10 Milliliter, Oral, AT BEDTIME
docusate 250 Milligram, Oral, AT BEDTIME, **Indication:** constipation
fenofibrate (fenofibrate 145 mg oral tablet) 1 Tablet(s), Oral, DAILY
fenofibrate 145 Milligram, Oral, DAILY, **Indication:** cholesterol
fluPHENAZine (fluPHENAZine 10 mg oral tablet) 1 Tablet(s), Oral, 3 TIMES A DAY
fluPHENAZine 10 Milligram, Oral, 3 TIMES A DAY, **Indication:** Psychosis
levoTHYROXINE (levoTHYROXINE 100 mcg (0.1 mg) oral tablet) 1 Tablet(s), Oral, DAILY
levoTHYROXINE 100 Microgram, Oral, DAILY, **Indication:** thyroid
metoprolol (metoprolol tartrate 50 mg oral tablet) 1 Tablet(s), Oral, 2 TIMES A DAY
metoprolol 50 Milligram, Oral, 2 TIMES A DAY, **Indication:** HTN

Recommendations

- **Beneficial:** Nursing staff education regarding methods to obtain accurate medication history
  - Identification of individual managing medications
    - Patient vs. family member vs. caretaker vs. facility
    - MAR = gold standard for SNF patients
  - Careful consideration historian reliability
  - Verification with multiple sources as needed
    - Ex: Outpatient pharmacy
  - Appropriate handoffs and follow-up if optimal list not obtained upon admission

Recommendations

- **Optimal:** Dedicated resources to perform medication histories
  - Float nurses trained in medication reconciliation or
  - Pharmacy technicians or
  - Pharmacy interns or
  - ToC pharmacist + above

References

1) National Transitions of Care Coalition. Available at www.ntocc.org (Accessed June 1, 2015).

2) Viggiano, Theresa, Harold A Pincus, and Stephen Crystal. "Care Transition Interventions in Mental Health." Current Opinion in Psychiatry 25.6 (2012): 551-58. Web.

3) Gleason, Kristine M, et al. "Reconciliation of discrepancies in medication histories and admission orders of newly hospitalized patients." American journal of health-system pharmacy 61.16 (2004):1689-1695.

4) Hampton, Lee M, Matthew Daubresse, Hsien-Yen Chang, G Caleb Alexander, and Daniel S Budnitz. "Emergency Department Visits by Adults for Psychiatric Medication Adverse Events." JAMA Psychiatry 71.9: 1006-014. Web.