



Pharmacist-Managed Transitions of Care: Monitoring and Documenting Continued Outpatient Parenteral Antimicrobial Therapy (OPAT)

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Jerame Hill, Pharm.D., M.S.

Disclosure

The program chair and presenters for this continuing education activity have reported no relevant financial relationships, except:

- **Julie Pawola** - Epic (Spouse/Partner): Employee

Learning Objectives

- Define outpatient parenteral antimicrobial therapy (OPAT) history, challenges, and risks
- Recommend strategies to identify OPAT patients at risk for complications or readmission
- Describe an OPAT transition, ambulatory pharmacy encounter, workflows, and documentation in an electronic health record (EHR)
- Define and evaluate patient care goals with regards to OPAT and broader ambulatory pharmacy monitoring programs



Transition of Care Workflows and Electronic Medical Record

Julie Pawola, Pharm.D.

Best Practices

- Project goals
 - Determine the best practices in transitions of care
 - Disseminate educational materials to clinical and fiscal staff
 - Provide workflows to utilize the pharmacist's skills to deliver expert and efficient care

Best Practices

- Project findings – patient risks
 - Bidirectional flow of electronic patient information and data transfer is critical
 - Notable advantage in patient care if all providers able to view and document in the EHR
 - Risk of medication related sequelae and adverse infectious outcomes high

Best Practices

- Project findings (continued)
 - Inpatient and outpatient providers must share EHRs
 - Information sharing = unified and coordinated care for patients
 - Increase in quality and efficiency
- Overall, communication is key to success

Question #1

Communication barriers exist between pharmacists in the inpatient and outpatient settings, which can led to patient harm.

A TRUE

B FALSE

TRUE

Best Practices

- Communication goals
 - Accurate and timely communication
 - Prevent harm
 - Eliminate Barriers
 - Between inpatient and outpatient pharmacists

Background Research

- Discharge on OPAT results in high readmission rates
- Partially linked to suboptimal communication during transition of care

Institutional Background

- Most common indication
 - Skin and Soft Tissue Infections
 - Osteomyelitis
 - Pneumonia

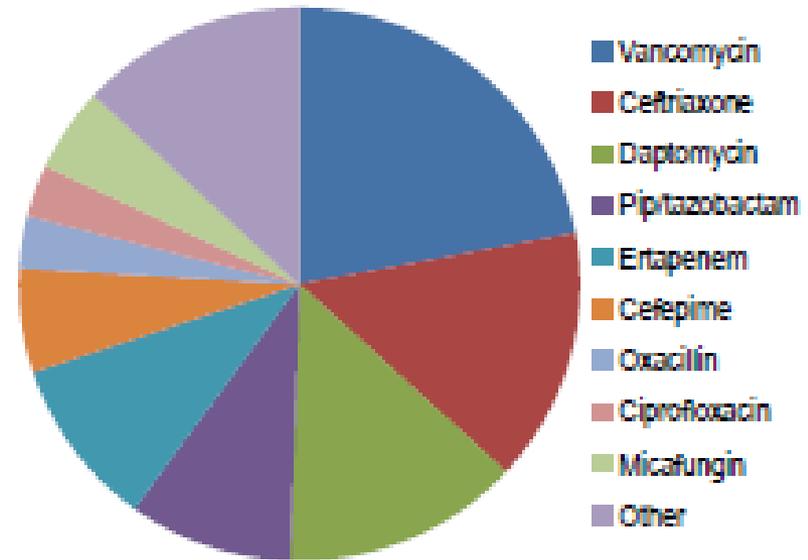


Figure 1: most commonly used antimicrobial agents

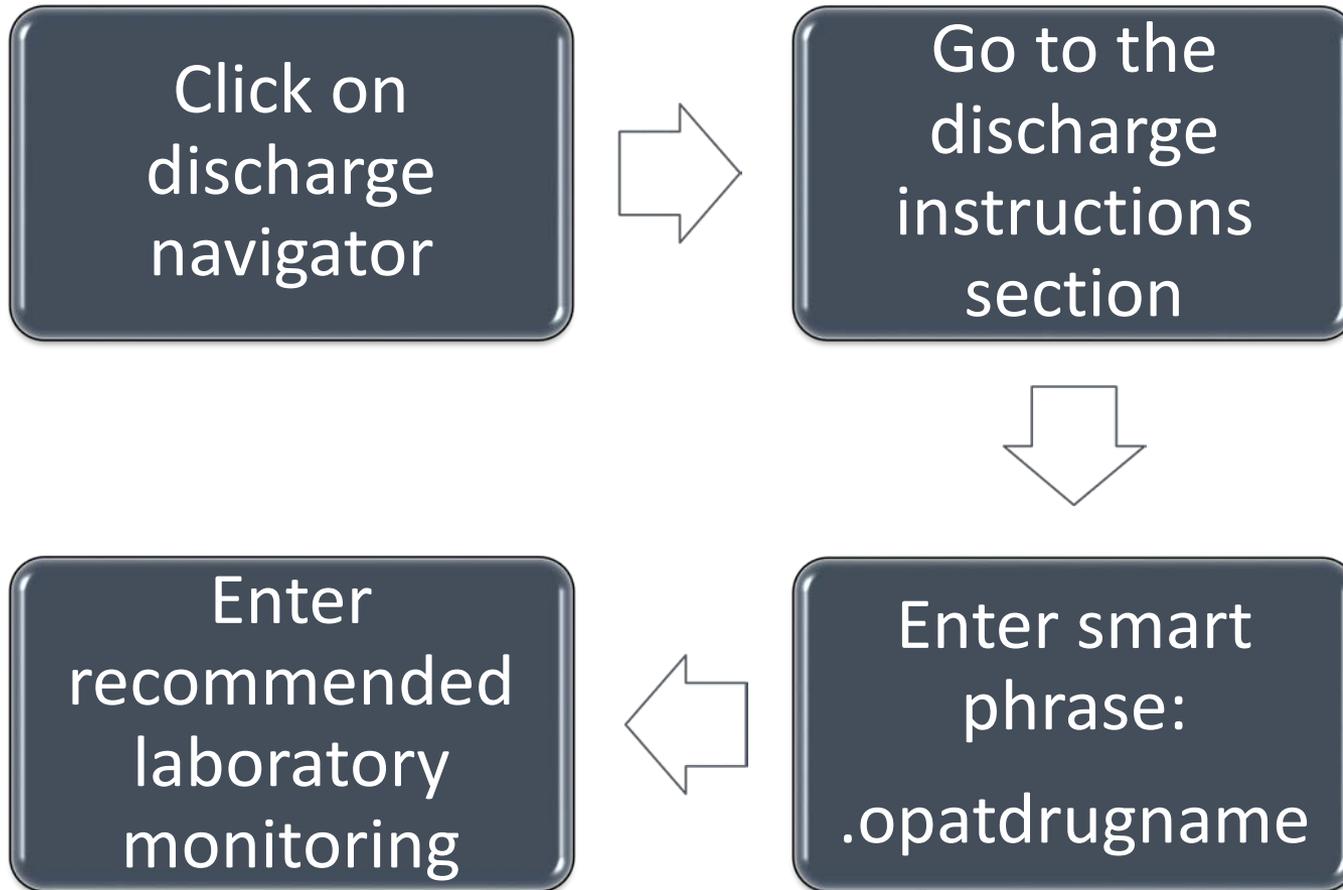
Initial OPAT Workflow



Institutional Objective

- Create clear, concise, and easy to retrieve OPAT follow-up instructions in the patient's electronic medical record (EMR)

1st Generation Workflow



1st Generation Workflow

The screenshot shows a software interface for entering discharge instructions. On the left is a navigation pane with 'Discharge' and 'Discharge Inst' (selected). The main window has a title bar 'Discharge Instructions' and a toolbar with various editing tools. The text area contains the following instructions:

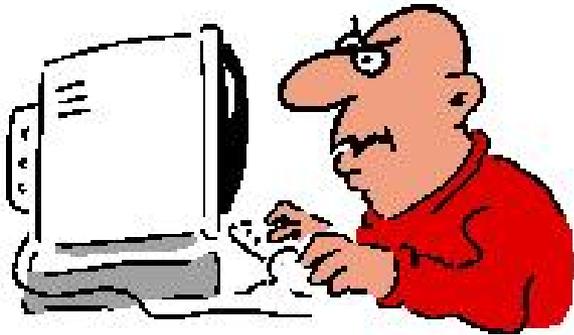
Antimicrobial Discharge Instructions
Antimicrobial name: ***
Indication for antimicrobial: ***
Current dose: ***
Anticipated duration of antimicrobial therapy "if known": (OPAT DURATION THERAPY:2000454)
Labs that should be drawn and reviewed by physician while on antimicrobial therapy:

CBC with differential: once weekly
Creatinine (SCr): twice weekly
Other: Drug levels weekly or as needed based on SCr

Laboratory results should be sent/faxed to: ***
Notified (OPAT PATIENT PLAN:2000453) about patient's plan

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Results



2nd Generation Workflow



Workflow Redesign Objectives

- Primary endpoints
 - Identify OPAT patients at hospital discharge
 - Ensure appropriate OPAT follow-up
 - Expand the role of pharmacists in the infectious disease clinic

Workflow Redesign Objectives

- Secondary endpoints
 - Infection resolution
 - Decrease hospital readmission rates
 - Reduce adverse drug events (ADEs) of OPAT patients

5 Rights of Clinical Decision Support

- Right channel
- Right people
- Right time
- Right information
- Right format

The Five Rights of Clinical Decision Support: CDS Tools Helpful for Meeting Meaningful Use; [www.ahima.org; http://library.ahima.org/doc?oid=300027#.V-CnMvkrKnE](http://library.ahima.org/doc?oid=300027#.V-CnMvkrKnE). Accessed 9/19/2016.

Right Channel

- Electronic Medical Record



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Right People

- Discharge provider
 - Enters follow-up laboratory monitoring
- Pharmacist
 - Reviews discharge medications and laboratory monitoring

Right Time

Rounding Navigator

Rounding
ROUNDING
BestPractice
Allergies
Current IP OP Meds
Rounding Report
Daily Profile Rev.
ANTICOAGULATION
Accordion
UFH Guideline
Monitoring
Notes
PEDIATRIC AKI
Accordion
Monitoring
VTE SCREEN
VTE Px Guideline
VTE Screen
Caprini Rec
Verify Rx Benefits
Outside Meds
Med. Document

Discharge Navigator

Discharge
BestPractice
MEDICATION RECONCILIATION
DC Status
PT Room Phone #
Med Rec Status
Order Reconciliation
Recommended Di...
Medication Chart
DEA Number
E-Prescribe Meds
View AHCP
OPAT
Monitoring
Guidelines
Reports
Agencies/Facilities
DOCUMENTATION
Med rec
Education
HANDOFF
RPH to RPH Han...
RPH to Provider...
Pt's Pharmacy
Comm Manager

Right Information

- Review after hospital care plan
 - Lab orders
 - Antimicrobial therapy
 - Discharge agencies/facilities
- Provide hyperlink to the institution's guidelines on OPAT monitoring

Right Information

▶ View AHCP...

Monitoring - OPAT Patient ↑ ↓

Time taken: 0810 9/9/2016 Show: Row Info **Last Filed** Details All Choices

Add Row Add Group Add LDA Values By Create Note

▼ **OPAT Patient**

Patient is being discharged on outpatient parenteral antibiotics? Yes

Yes taken 1 week ago

⌘ Restore ✓ Close F9 ✗ Cancel ↑ Previous F7 ↓ Next F8

▼ **OPAT Guidelines** ↻

OPAT Guideline

▼ **OPAT Reports** ↻

Medication Discharge Planning Comment

8/23/2016 Insurance
Navitus

Last edited by **Melissa S Hall** on 08/23/16 at 1142

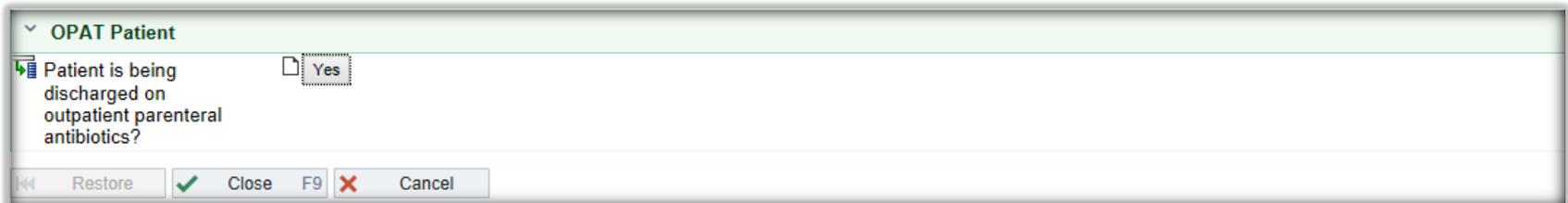
Discharge Agencies/Facilities click to open

Name	Relationship	Specialty	Phone	Fax	Address	Order
Chartwell					PH 608-831-8555	
Instructions: Provider of IV antibiotic and related supplies						
Horizon Home Health					PH 800-468-4660	
Instructions: Please fax discharge packet to home health						
No Ref Prov No Referring Provider		Unknown Specialty			Fax 414-365-8330	

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Right Format

- Best Practice Alert (BPA)
 - Functionality within EMR that allows for an alert based on specific triggers
 - Passive decision support



The screenshot shows a software dialog box titled "OPAT Patient". The main text asks, "Patient is being discharged on outpatient parenteral antibiotics?". To the right of the text is a checkbox labeled "Yes". At the bottom of the dialog, there are three buttons: "Restore" (with a left arrow icon), "Close F9" (with a green checkmark icon), and "Cancel" (with a red X icon).

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Right Format

The BPA is used to fire an in-basket message if the patient is discharge on outpatient parenteral antibiotics

Active

Date	User	Actions Taken	Triggers	Comment
09/06/16 1909	Julie A Pawola, RPH [JAV8]	Send In Basket Message	File Doc Flowsheets - Patient is being discharged on outpatient parenteral antibiotics? : Yes - Pharmacist Discharge Education: Completed	None

Bpa Labs

[View Complete Flowsheet](#)

TXP BPA Labs	Latest Ref Rng	6/25/2016	6/25/2016	6/24/2016	6/24/2016	6/24/2016	6/24/2016
Creatinine	0.73 - 1.18 mg/dL	-	1.81(H)	2.47(H)	2.66(H)	2.63(H)	2.44(H)
Potassium	3.5 - 5.1 mmol/L	-	4.0	5.0	5.5(H)	6.2(HH)	-
ALT	0 - 55 U/L	-	11	-	-	12	-
Hemoglobin	13.6 - 17.2 g/dL	9.9(L)	8.7(L)	-	-	-	10.9(L)
Hematocrit	40 - 52 %	31(L)	27(L)	-	-	-	34(L)

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Question #2

The five rights of clinical decision support need to be considered when implementing new workflows in the electronic medical record.

A TRUE

B FALSE

TRUE

Workflow Limitations

- Timing of BPA:
 - Triggered at the time of OPAT documentation not at patient discharge
- Did not ensure review of laboratory monitoring
- No logic to filter based on patient inclusion criteria

Workflow Enhancements

OPAT Patient

Patient is being discharged on outpatient parenteral antibiotics?	<input type="button" value="Yes"/>
Patient's outpatient parenteral antibiotic laboratory monitoring has been reviewed?	<input type="button" value="Yes"/>

Restore Close F9 Cancel

BestPractice Advisory - Zztesttxp,Kidney1

This patient is being discharged on outpatient parenteral antibiotics and laboratory monitoring has not been reviewed

OK

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Alternative Workflow

- What if there are no ambulatory pharmacists?
- Best Practice Alert
 - Ambulatory order for IV antimicrobials
 - Patient was discharged from hospital within the last X hours
 - Send an in-basket message to selected providers
- Maintenance of the list of antibiotics



Ambulatory Pharmacists' Workflow & EMR Build

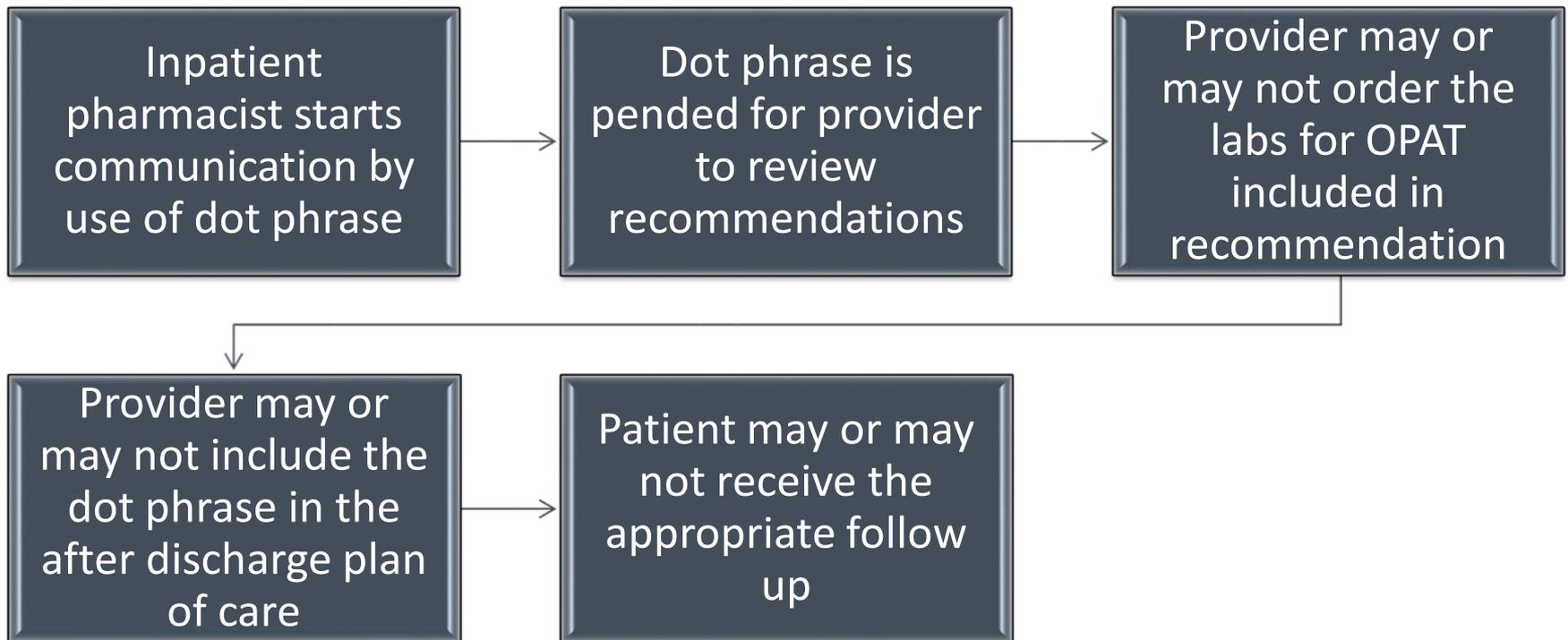
Kerry Goldrosen, Pharm.D.

Jerame Hill, Pharm.D., M.S

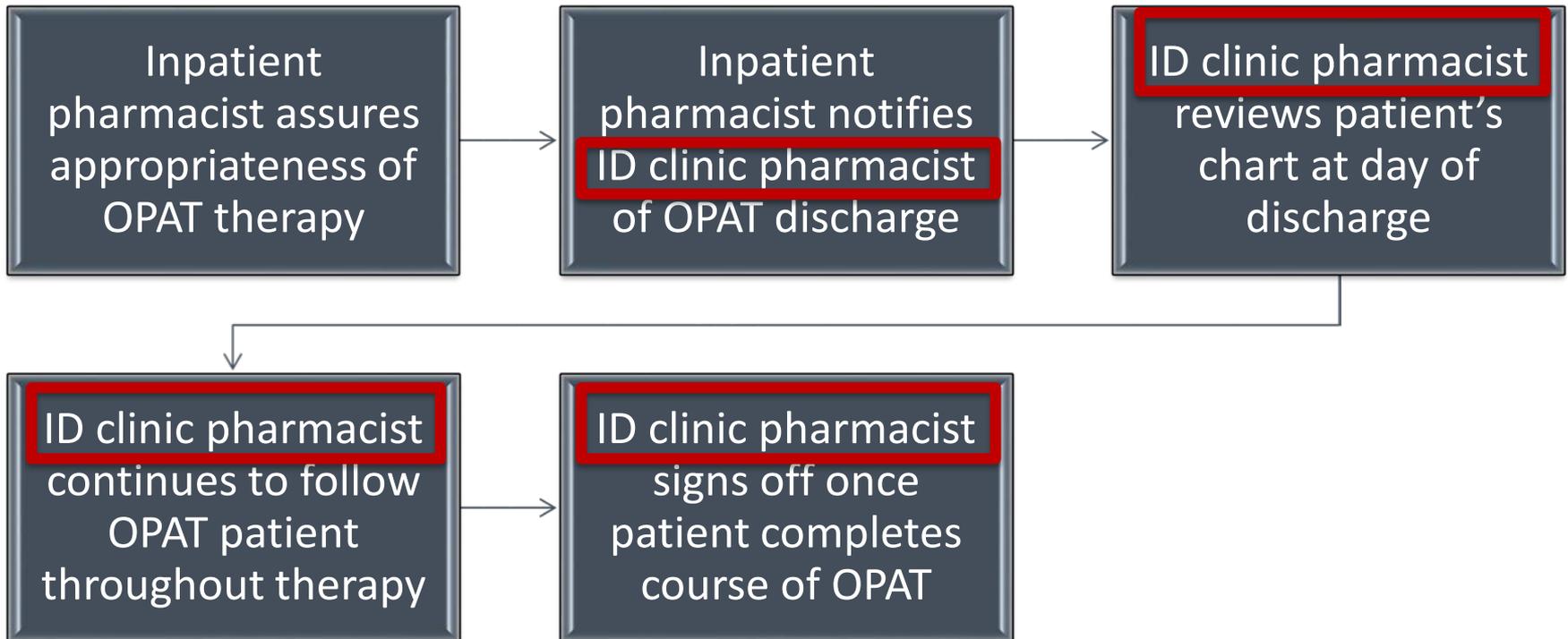
Infectious Disease Pharmacists

- Major responsibilities
 - Antimicrobial Stewardship
 - Works within the infectious disease clinic 5 days a week
 - Member of infection control department
 - Development of delegation protocols
 - Order set management

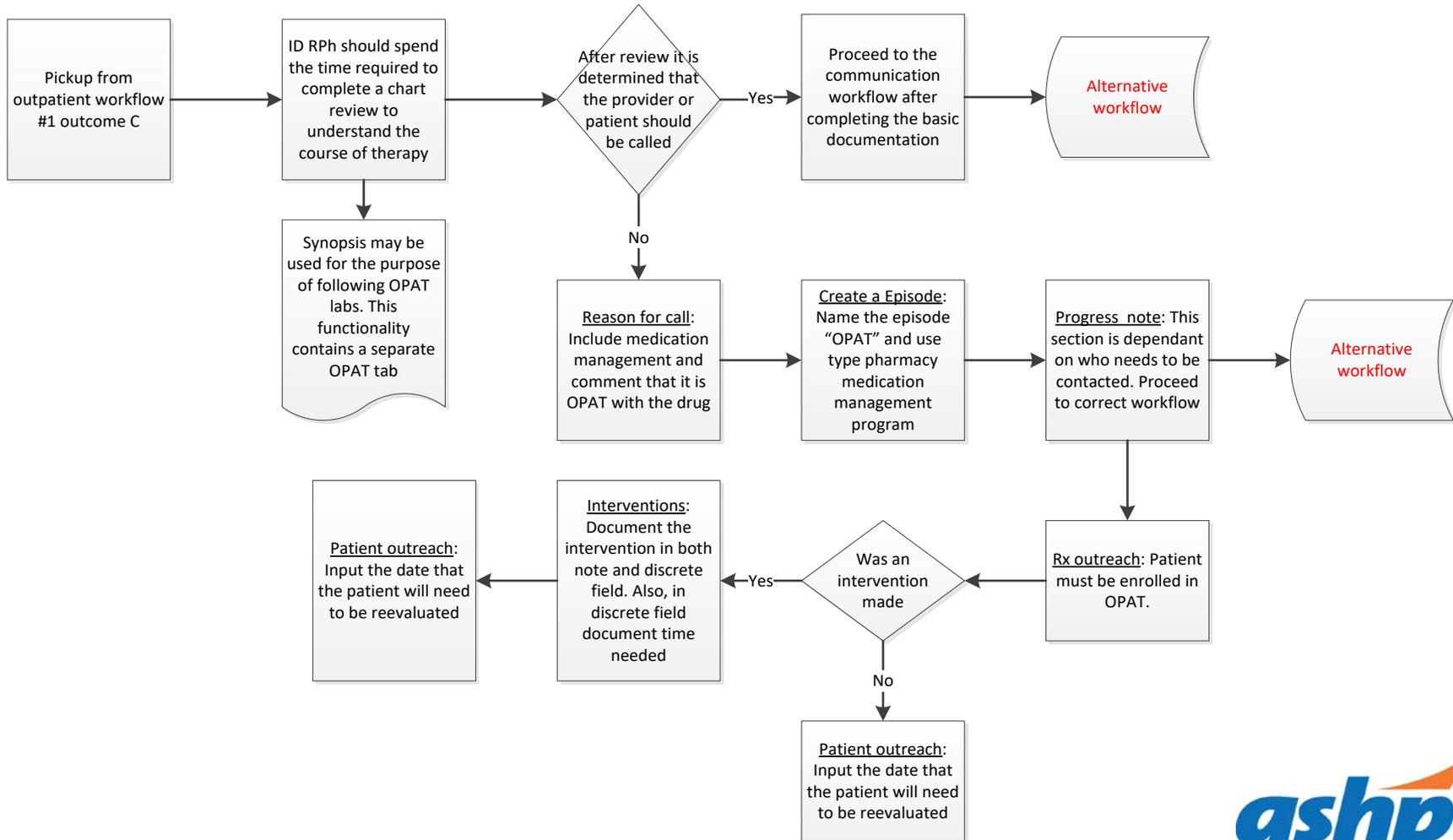
1st Generation Workflow



2nd Generation Workflow



Ambulatory EMR Workflow



BPA Notification

- Message received from patient's discharge

Status	Msg Date	Msg Time	Resp	Comm...	Patient	Organ	BPA Trigger	Visit
Pend	08/24/16	8:40 AM			Zztestrx, Pedslarge M		OPAT Patient	07/07/16
New	08/30/16	3:25 PM			Zztestrx, Sbp		OPAT Patient	08/09/16
New	08/19/16	4:40 PM			Zztesttxp, Kidney1	Kid	OPAT Patient	07/13/16
New	08/19/16	4:46 PM			Zztestec, Buck		OPAT Patient	06/28/16

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- Chart review performed to determine if patient needs monitoring and enrollment into ID clinic pharmacist OPAT monitoring program

Patient Enrollment

- Chart review
 - Exclude patients managed INTERNALLY
 - Obtaining therapy from our institutional infusion company
 - Include patients managed EXTERNALLY
 - Referred back to external health care providers
 - Lack of established care providers

Patient Enrollment

- Enroll patient into the OPAT program
- Ensures ability to find patients and track them
 - ID pharmacy department & pharmacy telephone encounter
 - OPAT enrollment & un-enrollment
 - Episode of care
 - Groups encounters, notes, etc...

Patient Enrollment

- Pharmacist enrolls patient into the monitoring program

Transitions of Care Pharmacist Outreach Enrollment					
Primary Care (Transitions) Pharmacist		Enrolled	Complete	Pending	Unable to Contact
Infectious Disease Pharmacist OPAT		Enrolled	Complete	Pending	Unable to Contact

A red arrow points from the 'Infectious Disease Pharmacist OPAT' row to the 'Enrolled' button.

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Episode of Care

- Episode: Groups care together for ease of patient management
 - Medication Management

New Episode

Name:

Type:

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Patient Tracking

- Ability to track patients is vital

Med Document
SmartSets
Meds & Orders
Progress Notes
Pt Outreach
Rx Outreach
Learning Asmnt
Teaching Doc
Disposition
Pt. Instructions

Track Pt Outreach

Contacted via:

Contacted about:

Next contact:

Close F9

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Patient Interventions

- Uniform across ambulatory encounters
- Intervention standardization was challenging
- Pharmacy Society of Wisconsin
 - Wisconsin Pharmacy Quality Collaborative
 - <http://www.pswi.org/WPQC>
 - Level 1

Pharmacist Interventions							
Pharmacist Interventions	Counseling	Med Rec	Begin Chart Review - N...	Laboratory Monitoring	Dose Adjustment	Drug Selection	Medication Addition
	Drug Interaction	Discontinue Med	Adherence Counseling	Prescription Renewal	Cost-effectiveness	Adverse Drug Reaction	Medication Action Plan
	Untreated Condition	Duration Adjustment	Therapeutic Duplication	Follow-up	Device Teaching		

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Progress Notes

- Note Template
 - Discrete documentation to support reporting
 - Scripted logic

OPAT medication review Med Compliance Provider FU Note

Outpatient Pharmacy Antimicrobial Therapy Medication Management

<input type="checkbox"/> amakacin (AMIKIN)	<input type="checkbox"/> amphotericin B (ALL FORMS)	<input type="checkbox"/> cefazolin (ANCEF)	<input type="checkbox"/> cefepime (MAXIPIME)
<input type="checkbox"/> ceftriaxone (ROCEPHIN)	<input type="checkbox"/> daptomycin (CUBICIN)	<input type="checkbox"/> ertapenem (INVAZ)	<input type="checkbox"/> gentamicin
<input type="checkbox"/> meropenem (MERREM)	<input type="checkbox"/> micafungin (MYCAMINE)	<input type="checkbox"/> oxacillin	<input type="checkbox"/> piperacillin-tazobactam (ZOSYN)
<input type="checkbox"/> tobramycin	<input type="checkbox"/> vancomycin (VANCOCIN)	<input type="checkbox"/> other anti-infective medication (explain in note text)	<input type="checkbox"/> oritavancin (ORBACTIV)

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Progress Notes

OPAT medication review			
Med Compliance	Provider FU	Note	
<input type="checkbox"/> amakacin (AMIKIN)	<input type="checkbox"/> amphotericin B (ALL FORMS)	<input type="checkbox"/> cefazolin (ANCEF)	<input type="checkbox"/> cefepime (MAXIPIME)
<input type="checkbox"/> ceftriaxone (ROCEPHIN)	<input checked="" type="checkbox"/> daptomycin (CUBICIN)	<input type="checkbox"/> ertapenem (INVAZ)	<input type="checkbox"/> gentamicin
<input type="checkbox"/> meropenem (MERREM)	<input type="checkbox"/> micafungin (MYCAMINE)	<input type="checkbox"/> oxacillin	<input type="checkbox"/> piperacillin-tazobactam (ZOSYN)
<input type="checkbox"/> tobramycin	<input type="checkbox"/> vancomycin (VANCOCIN)	<input type="checkbox"/> other anti-infective medication (explain in note text)	<input type="checkbox"/> oritavancin (ORBACTIV)
Indication for anti-infective treatment	osteomyelitis	pneumonia	SSTI
	intra-abdominal	bacteremia	endocarditis
	septic arthritis or prosthetic joint	CNS infection	fungemia
	UTI		
Estimated duration of antimicrobial therapy	1 week	2 weeks	4 weeks
	8 weeks	to be determined by provider	other (explain in note text)
Labs (recommended)	CBC with differential	CPK	CPR
	serum Creatinine		ESR
			LFT
Lab frequency	1 week	2 weeks	4 weeks
	8 weeks	to be determined by provider	other (explain in note text)
Adverse reactions/side effects	infusion site reaction	throat swelling	diarrhea
	hives	nausea/vomiting	rash
		other (explain in note text)	

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Adherence

OPAT medication review **Med Compliance** Provider FU Note

Adherence Screening

How many doses does the patient state they have missed in the last:

1 week 2 weeks 4 weeks 6 weeks 8 weeks

Other (describe in note text)

Doses missed and reasons

none 1-2 2-5 >5

Access to medication Cost Infection Instructed to hold by provider

Lack of perceived benefit Memory issue Motivational issues Other (explain in note text)

Side effects Social support

Compliance tools patient is using

Alarm/APP Calendar Keychain pill carrier Medication box Other (explain in note text)

Based on refill history, does there appear to be issues with non-adherence? (If Yes, Describe in Narrative)

Yes No

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Follow up

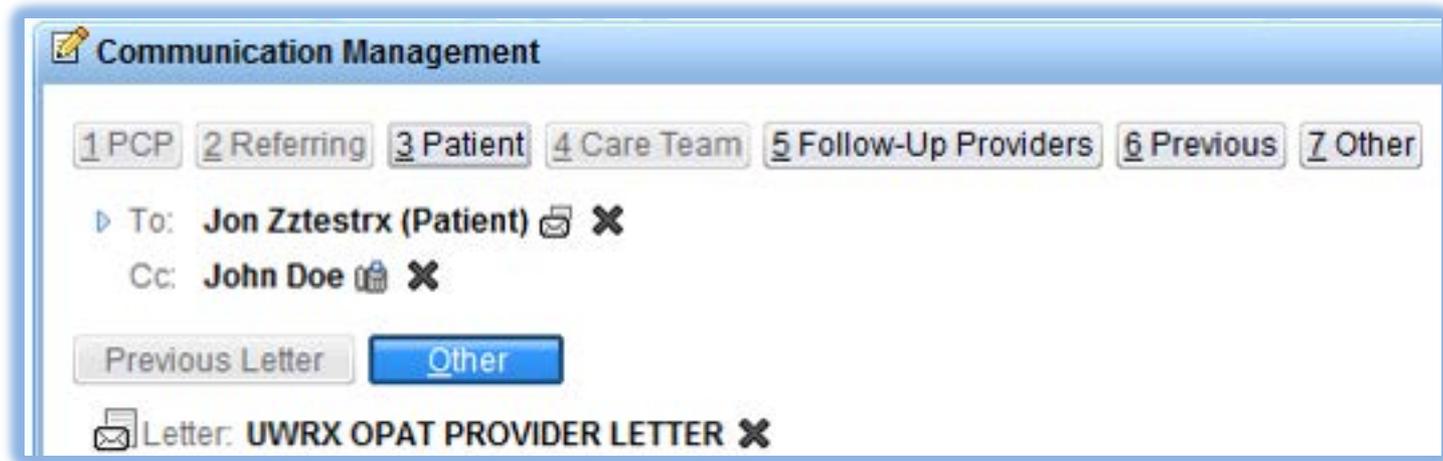
- Time intervals mimic ambulatory pharmacist billing times – 3rd party system

Provider Follow Up				
Provider contacted:				
<input checked="" type="checkbox"/> yes				
<input type="checkbox"/> no				
Provider contacted via:				
<input type="checkbox"/> in-basket message (UW Health providers ONLY)	<input type="checkbox"/> telephone call to clinic at phone number listed below			
<input type="checkbox"/> letter	<input type="checkbox"/> fax			
<input type="checkbox"/> other (explain in note text)				
Recommendation to provider:				
<input type="checkbox"/> accepted	<input type="checkbox"/> accepted with changes (explain in note comments)			
<input type="checkbox"/> declined				
Total time spent on encounter:				
<input type="radio"/> 1-5 minutes	<input type="radio"/> 6-10 minutes	<input type="radio"/> 11-15 minutes	<input type="radio"/> 16-20 minutes	<input type="radio"/> 21-25 minutes
<input type="radio"/> 26-30 minutes	<input type="radio"/> 31-35 minutes	<input type="radio"/> 36-40 minutes	<input type="radio"/> 41-45 minutes	<input type="radio"/> 46-50 minutes
<input type="radio"/> 51-55 minutes	<input type="radio"/> 56-60 minutes	<input type="radio"/> greater than 61 minutes		

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Communication Tools

- Two letter templates
 - Letter to provider
 - Letter to home infusion pharmacy



The screenshot shows a software interface titled "Communication Management". At the top, there are seven buttons labeled "1 PCP", "2 Referring", "3 Patient", "4 Care Team", "5 Follow-Up Providers", "6 Previous", and "7 Other". Below these buttons, the "To:" field is populated with "Jon Zztestrx (Patient)" and the "Cc:" field with "John Doe". At the bottom, there are two buttons: "Previous Letter" and "Other". Below the buttons, a message icon is followed by the text "Letter: UWRX OPAT PROVIDER LETTER".

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Communication Tools



UWH PHARMACY INFECTIOUS DISEASE

600 Highland Ave
Madison WI 53792
608-263-0946

September 16, 2016

RE: Patient:
Jon Zztestrx,
8007 Excelsior Dr
Madison WI 53717
5/28/1989
2515033

Dear Dr. John Doe,

The University of Wisconsin Department of Pharmacy's Infectious Disease Service is following Jon Zztestrx due to their Outpatient Parenteral Antimicrobial Therapy (OPAT) of Vancomycin for osteomyelitis. The expected duration of therapy is 28 days, with a dose of 1 gram, every 12 hours.

A comprehensive review of Jon Zztestrx OPAT therapy reveals elevated SCr. The University of Wisconsin Department of Pharmacy's Infectious Disease Service recommends **decreasing the dose to 1 gram every 24 hours.**

We ask that you please fax our office at (608) 203-1030 with your decision on our recommendation. This fax does **not** replace an order and you will still need to contact the patient's home health agency to provide them a new prescription or order for any changes in therapy. If you have any questions, please call our office at (608) 263-0946 and ask to speak with the pharmacists in clinic.

Sincerely,
Jerame K Hill, RPH
Clinical Pharmacist

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Limitations

- Pharmacy build is ahead of organization
- Uniformity
 - Use of standard templates
 - Can compare across medication management types
- Maintenance
 - New medications - timing
 - Vendor does not support individual medications

Question #3

When building documentation tools, uniformity is a key component of success.

A TRUE

B FALSE

TRUE



Workload Statistics and Clinical Outcomes

Jerame Hill, Pharm.D., M.S.

Workflow Redesign Objectives

- Workload objectives
 - Expand the role of pharmacists in the infectious disease clinic
- Clinical outcome objectives
 - Infection resolution
 - Decrease hospital readmission rates and eliminate ADEs

Methods for Monitoring Workload

- Work sampling: Indirect method of establishing time requirements
 - Used to determine the proportion of time spent on various activities
 - Each activity was designated as professional or technical

Rough S, Stashek C. 2009. Benchmarking and Productivity Analysis. In Wilson AL (Ed.), Financial Management for Health-System Pharmacists (pp. 181 – 198). Bethesda, MD.

Work Sampling Documentation

Arrival time: _____

Leave time: _____

Time Study for Infectious Disease Clinic

Pharmacist: _____

Date: _____

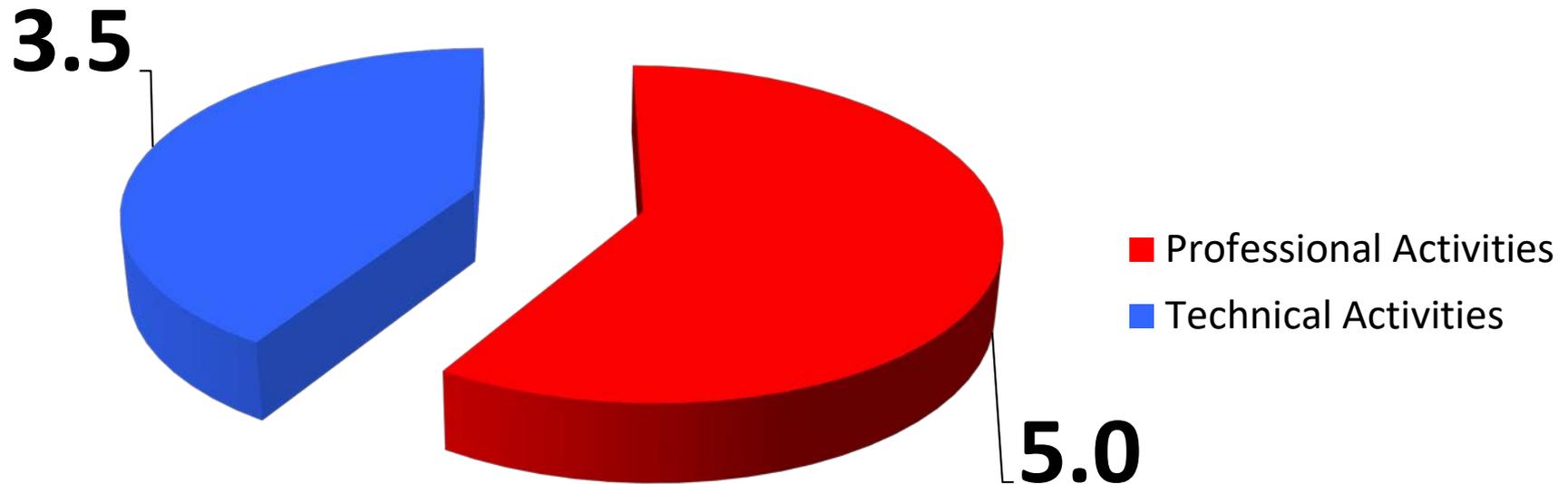
Instructions: Every time the work study pager goes off please place a mark in the box that best represents your activity at that moment.

Activity	Observations	Examples
Direct Patient Care		
New Patient		Performing a medication history in person or over the phone with a new HIV patient
Returning Patient		Time spent in the patient's room reviewing any changes in medications, answering patient questions, or counseling on new/changes in therapy
Indirect Patient Care		
Chart review		Reviewing the patient's chart before entering the room for direct patient care OR time spent in the patient's chart for reasons other than documentation
Documentation		Time spent in the patient's chart preparing/finalizing encounter notes
Discuss patient with providers (patient currently in clinic)		Time spent discussing appropriate therapy for the patient that are currently in the clinic with providers
Refill Request		Authorize refills
Insurance/PA request and issues		Addressing issues or facilitating insurance/PA request for providers
"Curbside" consult (Please specify if question is in regards to HIV vs non-HIV)	HIV: ____ OR Non-HIV: ____	When a provider/RN/MA ask for your expert opinion on any topic related to patient care (Please specify if question is in regards to HIV vs non-HIV)
Educational Activities		
Student / Resident Education		Discussions between pharmacist/resident/student including review of patients, journal clubs, topic discussions, tours, evaluations, etc.
Meetings	Meeting type: _____	All meetings including HIV related and non-HIV related topics
Other Non-patient related Activities		
Personal		Bathroom breaks, personal breaks, and lunch/dinner, non-patient related conversations with co-workers, checking email, etc.
Other		Please explain (additional space on back of sheet)

Please leave completed forms for each day next to the pharmacist workstation in the HIV clinic. Alternatively, they can be dropped off in Jerame Hill's mailbox in F6/146

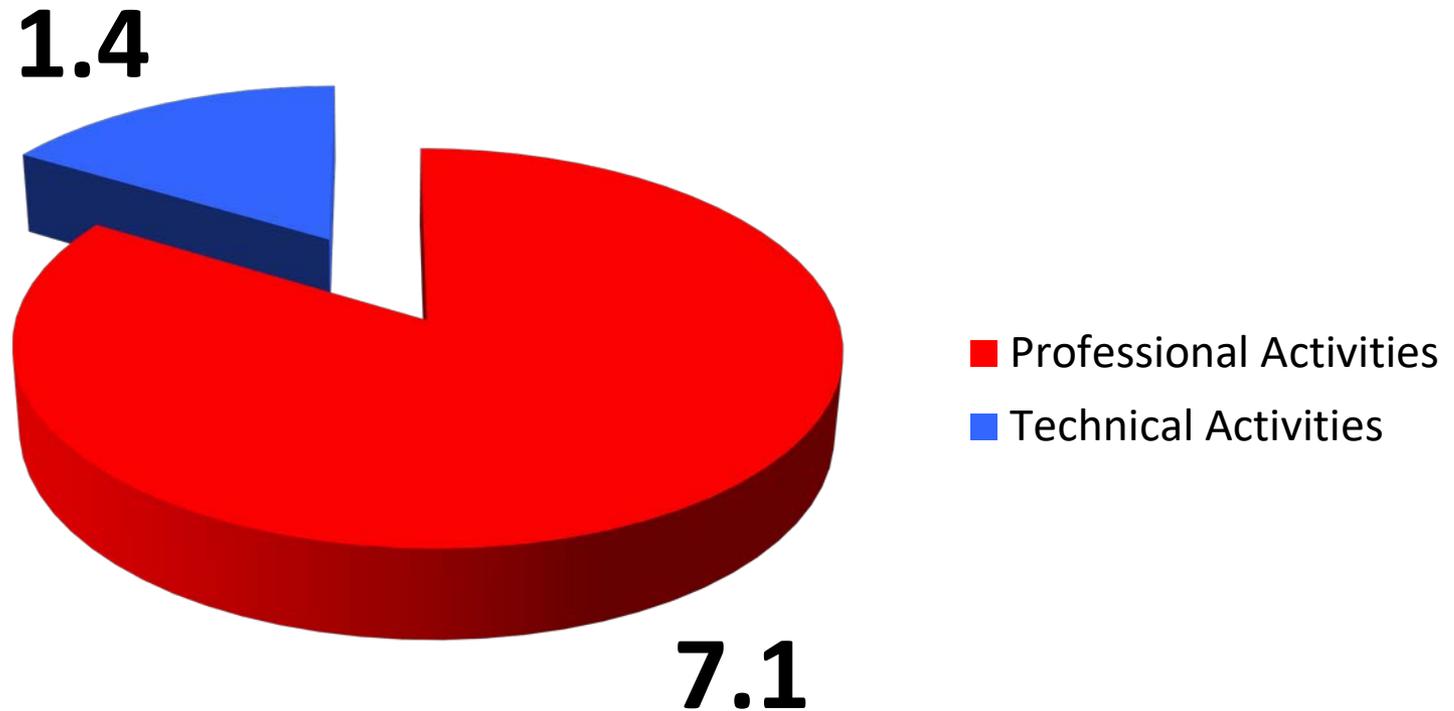
Baseline Time Study

Time (Based on an 8.5 hr work day)

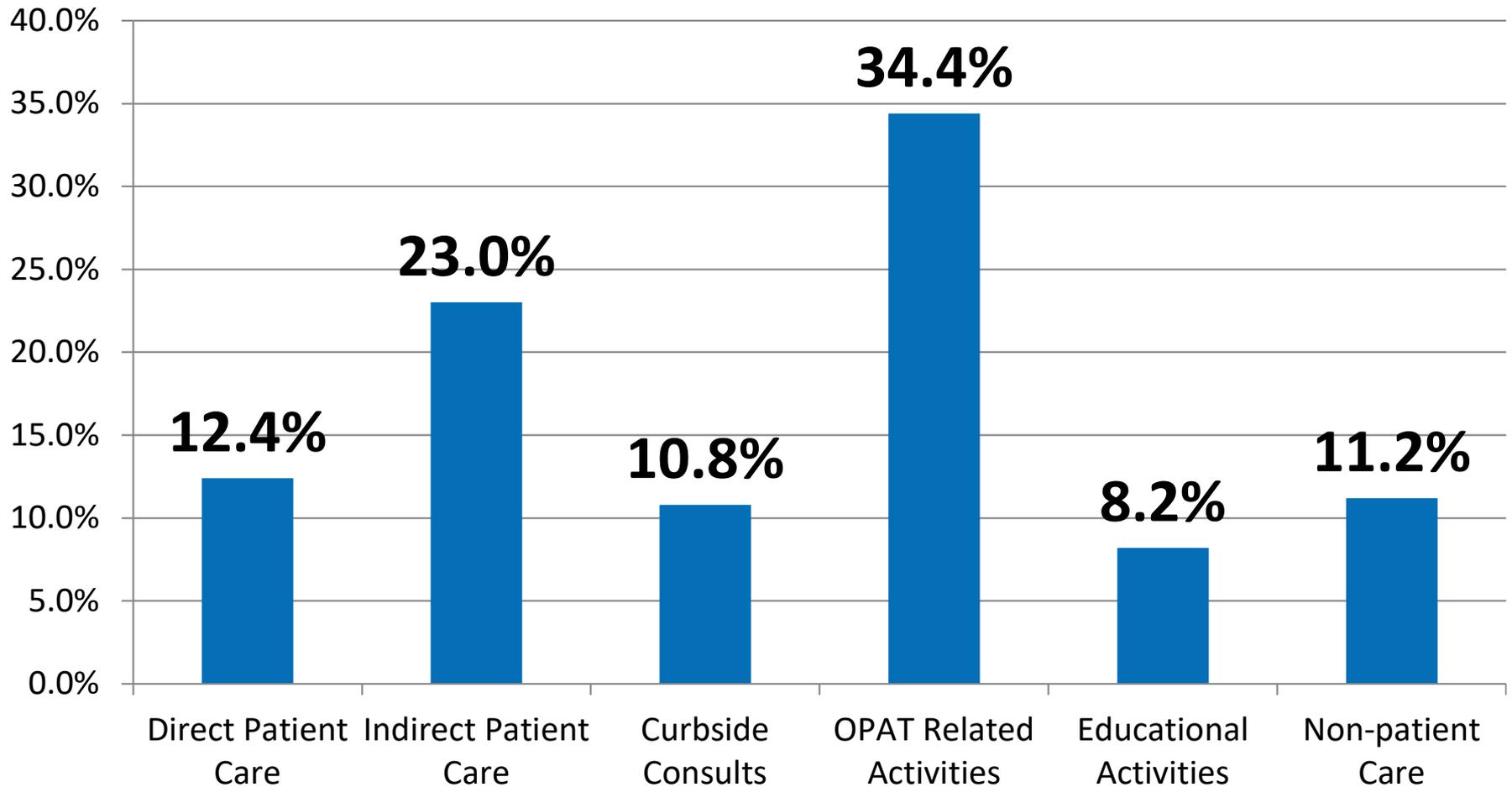


Post Go-live Time Study

Time (Based on an 8.5 hr work day)



Time Spent on OPAT



Outcomes Data

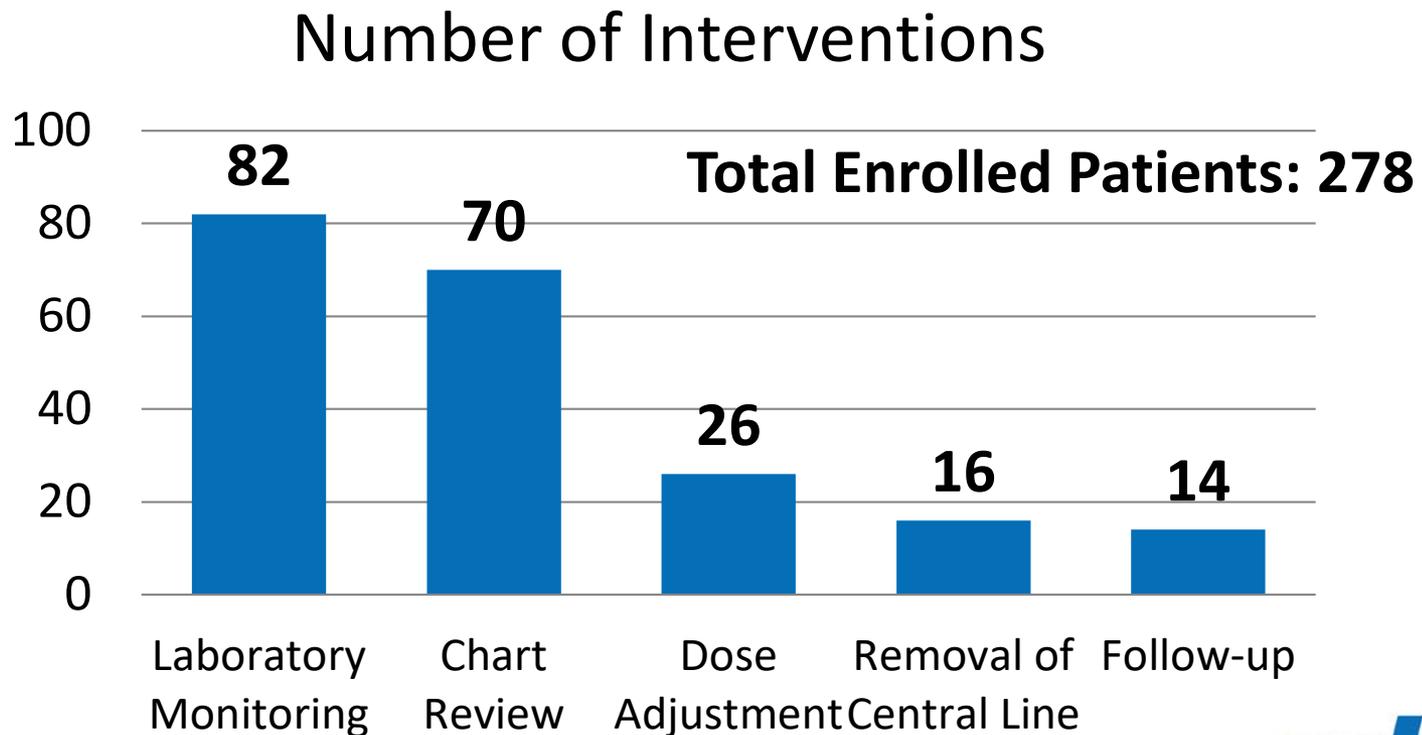
- Key data points
 - Number of patients enrolled
 - 30 day readmissions
 - Primary diagnosis at readmission
 - Interventions

Outcomes Reports

1. OPAT Enrollment and Interventions
2. OPAT Documentation Review
3. BPA Compliance Report
4. All OPAT Discharges/Readmissions
5. OPAT Program Enrollment/Readmissions

OPAT Enrollment and Interventions

- Purpose: Patient enrollment and the number and type of interventions



Timeframe: 9/1/15 – 8/31/16

OPAT Documentation Review

- Purpose: Individual patient review for quality

08/02/2016

UWRX SB MTM OPAT NOTE

Abx Labs (Cbc, Lft, Scr, Esr, Crp, Cpk)	CBC with differential CPK CPR ESR LFT serum Creatinine
Daptomycin (Cubicin)	✓
Expected Anti-Infective Duration	2 weeks
Indication For Anti-Infective Treatment	bacteremia intra-abdominal
Lab Frequency	1 week
Micafungin (Mycamine)	✓
Other Anti-Infective Medication (Explain In Note Text)	✓

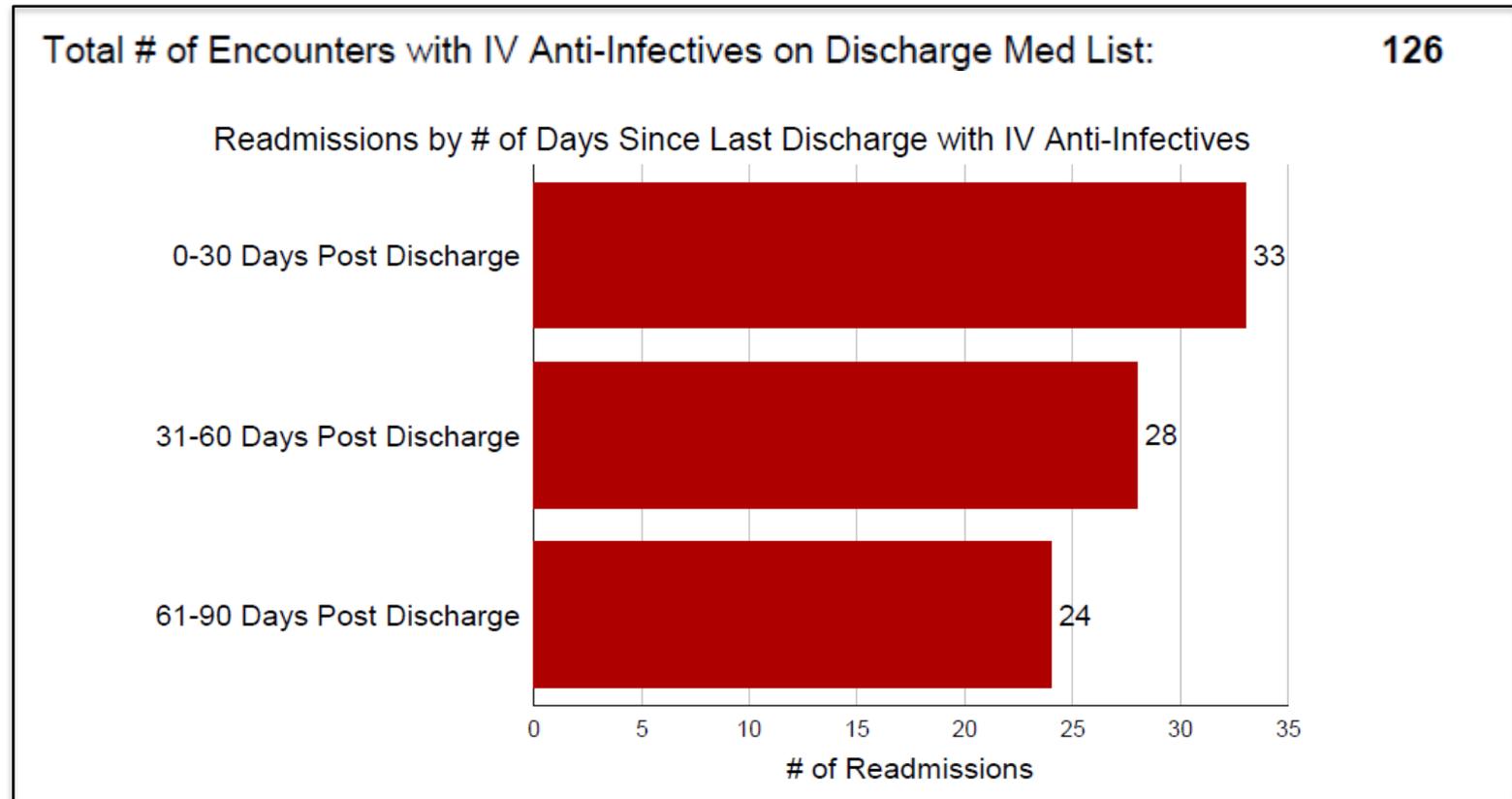
BPA Compliance Report

- Purpose: Workflow compliance

Total # of Encounters with IV Anti-Infectives on Discharge Med List:		126
Total # of Encounters with OPAT BPA Fired at Least Once:		74
BPA First Fired	Last Fired	Total # Fired 0
IV Anti-infectives on Discharge Med List		
CEFAZOLIN SODIUM INJ		
60-Day Readmission		
Readmission Hosp Arrival Time	Inpatient Admission Time	07/19/2016 06:07 Admis
Principle Admission Dx	T82.6XXA	Infection and inflammatory reaction due to cardiac v
Principle Final Dx	T82.6XXA	Infection and inflammatory reaction due to cardiac v

All OPAT Discharges/Readmissions

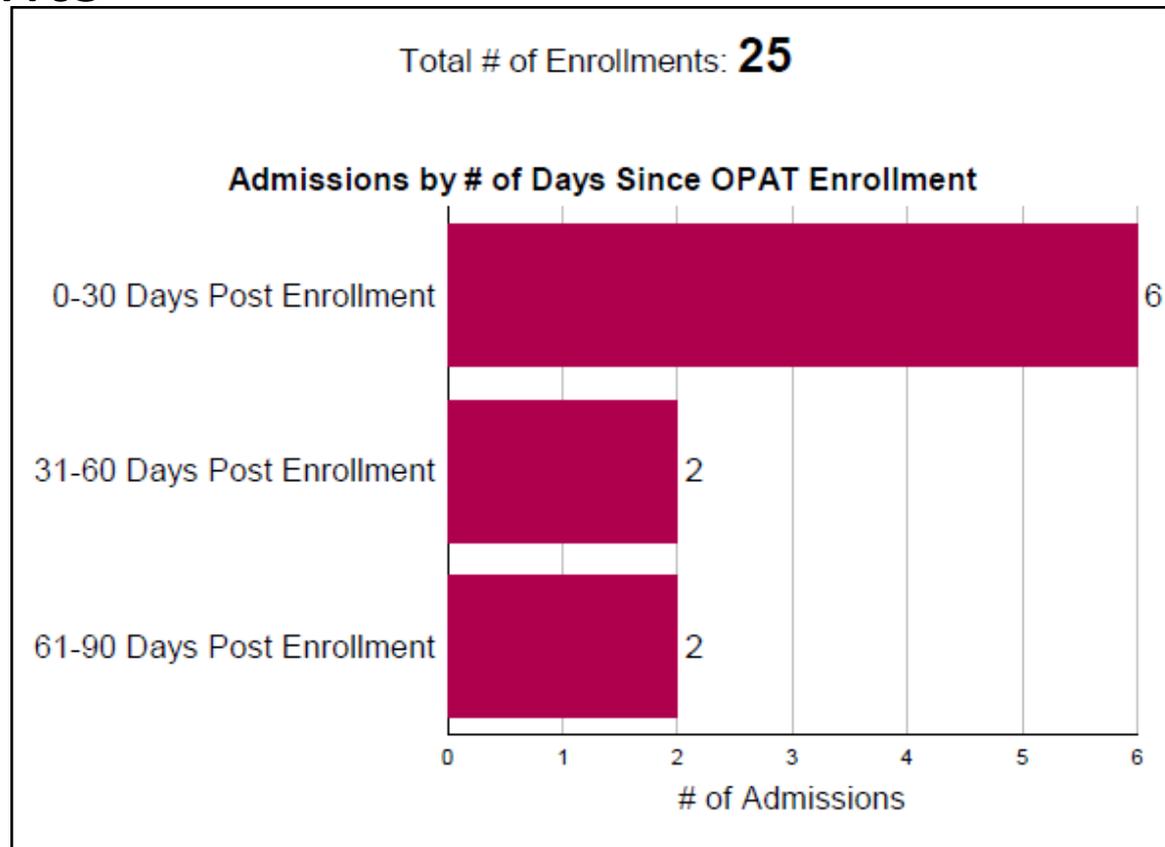
- Purpose: Readmissions across all OPAT patients



Timeframe: 5/1/16 – 5/31/16

OPAT Program Enrollment/Readmissions

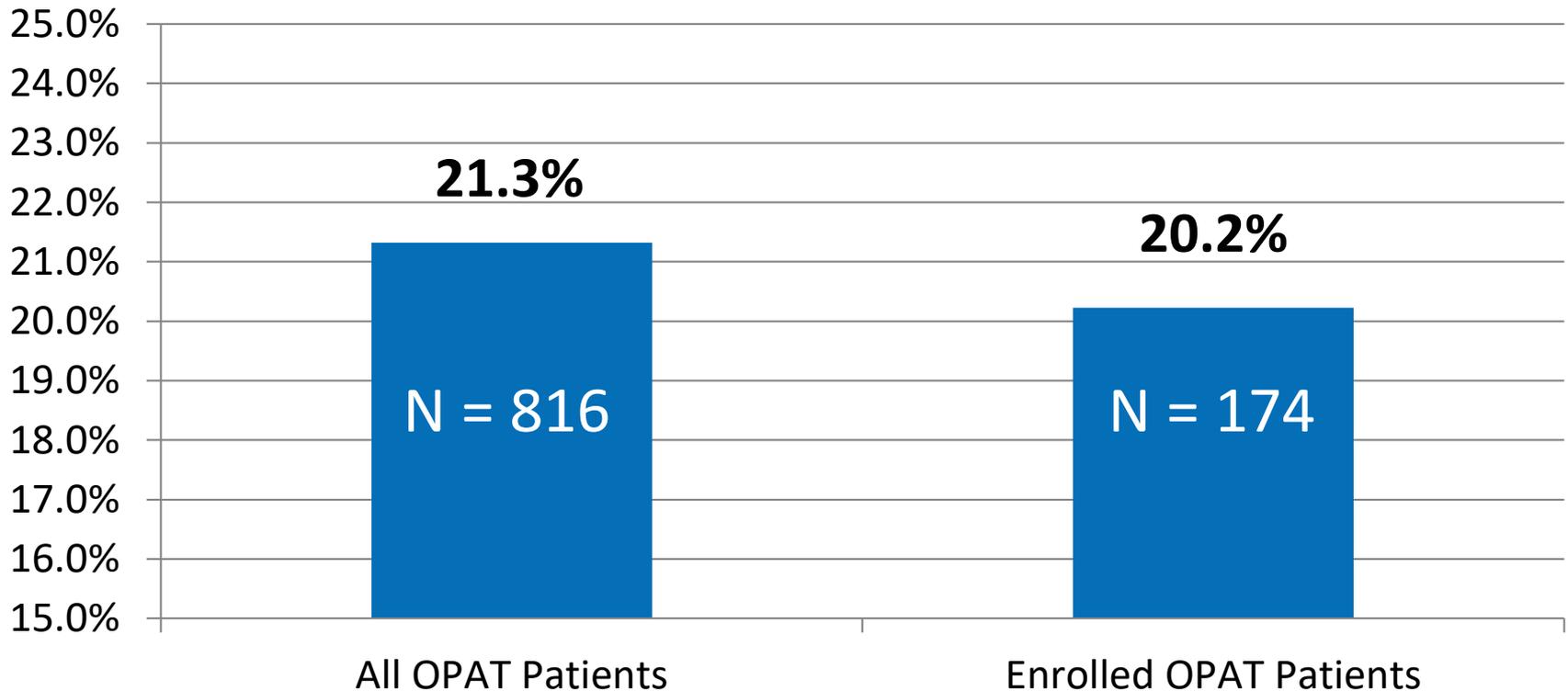
- Purpose: Readmissions for enrolled OPAT patients



Timeframe: 5/1/16 – 5/31/16

Readmission Percentage

Readmissions



Timeframe: 1/1/16 – 5/31/16

Interpreting the Data

- Considerable time commitment
 - Pharmacists spent 34% of their time on OPAT
 - Significant increase in time spent on professional activities
- Readmissions did not differ between groups
 - Decision has been made to focus pharmacists' time on high risk therapies

Question #4

The time studies discussed in this presentation allow investigators to _____.

- A Determine the exact amount of time it takes to complete a task.
- B Determine the percentage of each day pharmacists spend on a task.**
- C Determine if a task is adding value to patient care.
- D Determine if a task should be delegated to other staff members.



Applications Beyond OPAT

Kerry Goldrosen Pharm.D.

Julie Pawola, Pharm.D.

Implementation Considerations

- Determine patient population
- Identify patient population
- Communicate transitions of care
- Examine the workflow
- Configure/update build

Beyond OPAT

- Develop a consistent framework
 - Track patients
 - Document patient care and interventions
- Apply it to other disease states
 - Specialty pharmacy
 - Transitions of care
 - Chronic disease management (CHF, asthma)
 - Transplant
 - Oncology
 - Primary Care

Patient Enrollment

- Group by who is doing activities and where

Rx Outreach

▼ Clinic Pharmacist Outreach Enrollment					
Primary Care (Clinic-based) Pharmacist	<input type="checkbox"/>	Enrolled	Complete	Pending	Unable to Contact

▼ Transitions of Care Pharmacist Outreach Enrollment					
Primary Care (Transitions) Pharmacist	<input type="checkbox"/>	Enrolled	Complete	Pending	Unable to Contact
Infectious Disease Pharmacist OPAT	<input type="checkbox"/>	Enrolled	Complete	Pending	Unable to Contact

▼ Oncology Medication Pharmacist Outreach Enrollment					
Oral Chemotherapy	<input type="checkbox"/>	Enrolled	Complete	Pending	Unable to Contact
BMT Immunosuppression	<input type="checkbox"/>	Enrolled	Complete	Pending	Unable to Contact

▼ Chronic Disease Pharmacist Outreach Enrollment					
Asthma Medications	<input type="checkbox"/>	Enrolled	Complete	Pending	Unable to Contact
CHF Medications	<input type="checkbox"/>	Enrolled	Complete	Pending	Unable to Contact

⏪ Restore ✓ Close F9 ✗ Cancel

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Patient Outreach

- Identify patients
 - Enroll into a report
- Track patients – by enrollment category
 - Once enrolled, ability to set outreach dates
 - Report that is generated has salient information in columns for quick assessment
 - Disease state specific
 - Can use registry data – i.e # ED visits, etc

Documentation

- Disease state specific templates
- May include:
 - Medications
 - Labs and procedures (i.e. EF results in CHF, ACT for asthma)
 - Outcomes questions
- Report Synopsis

Primary Care Workflows

- Enhance pharmacist services through the development and standardization of workflows
 - Increase resolution of medication related problems
 - Prevent medication related acute care episodes
- Develop a workflow to identify and refer high risk patients from the inpatient setting to primary care pharmacists for post discharge follow up

Primary Care Workflows

▼ RPh Medication Reconciliation	
Medication Reconciliation Completed	 Admission Discharge
Student/Technician Medication Admission History Status	 Completed
Medication Related Problem	 Adherence Knowledge Access None identified Not able to assess

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Primary Care Workflows

- Best Practice Alert triggers
 - Patients who have discrete documentation of medication related problems
 - Document completion of pharmacist discharge medication counseling

Primary Care Workflows

- Alert message

This BPA is used to fire an in-basket message if the patient has a medication adherence problem for follow-up with the primary care pharmacists.

Date	User	Actions Taken	Triggers	Comment
09/08/16 2257	Julie A Pawola, RPH [JAV8]	Send In Basket Message	File Doc Flowsheets - Pharmacist Discharge Education: Completed - Medication Related Problem: Adherence	None

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Primary Care Results

- 2 month pilot period

149 total
referrals

Average 3
referrals/day

90 adherence
referrals

64 knowledge
referrals

Primary Care Results

- Intervention enhancements

Pharmacist Interventions

Medication

Medication:

Original dose

- Adherence barriers
- Medication adjustment
- Dose adjustment
- Duration adjustment
- Adverse drug event
- Consultation

Next Medication

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Future Directions

- Pharmacist specific registries
 - Dashboards
 - Real time reporting
- Face to face pharmacy office visits
- Direct billing from EMR
- Ambulatory patient medication charts
 - Available in patient portal

Question #5

What are some EMR tools to identify, monitor, and document on patients followed by pharmacists?

- A Pharmacy specific encounter types
- B Documentation Templates
- C Outreach reports
- D All of the above

Key Takeaways

- Key Takeaway #1
 - Incorporate the five rights of clinical decision support when developing new workflows
- Key Takeaway #2
 - Designing workflows that are simple and easy to follow will increase compliance and improve patient outcomes

Key Takeaways

- Key Takeaway #3
 - Standardize EMR build across initiatives as much as possible
- Key Takeaway #4
 - When implementing new clinical programs it is important to have data to monitor the success over time

Questions



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