



Focused Anticoagulation Service in Family Medicine Residencies

ETSU Family Medicine Associates
Johnson City, Tennessee

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Objectives

- Describe a method to improve care of patients on short-term or long-term anticoagulation
- Describe a method to provide high level anticoagulation management education for Family Medicine residents

Background

- Warfarin is defined as a high-risk medication, being one of the most common reasons for medication-related ER visits and hospitalizations
- Guidelines strongly encourage a focused approach to the care of anticoagulation patients

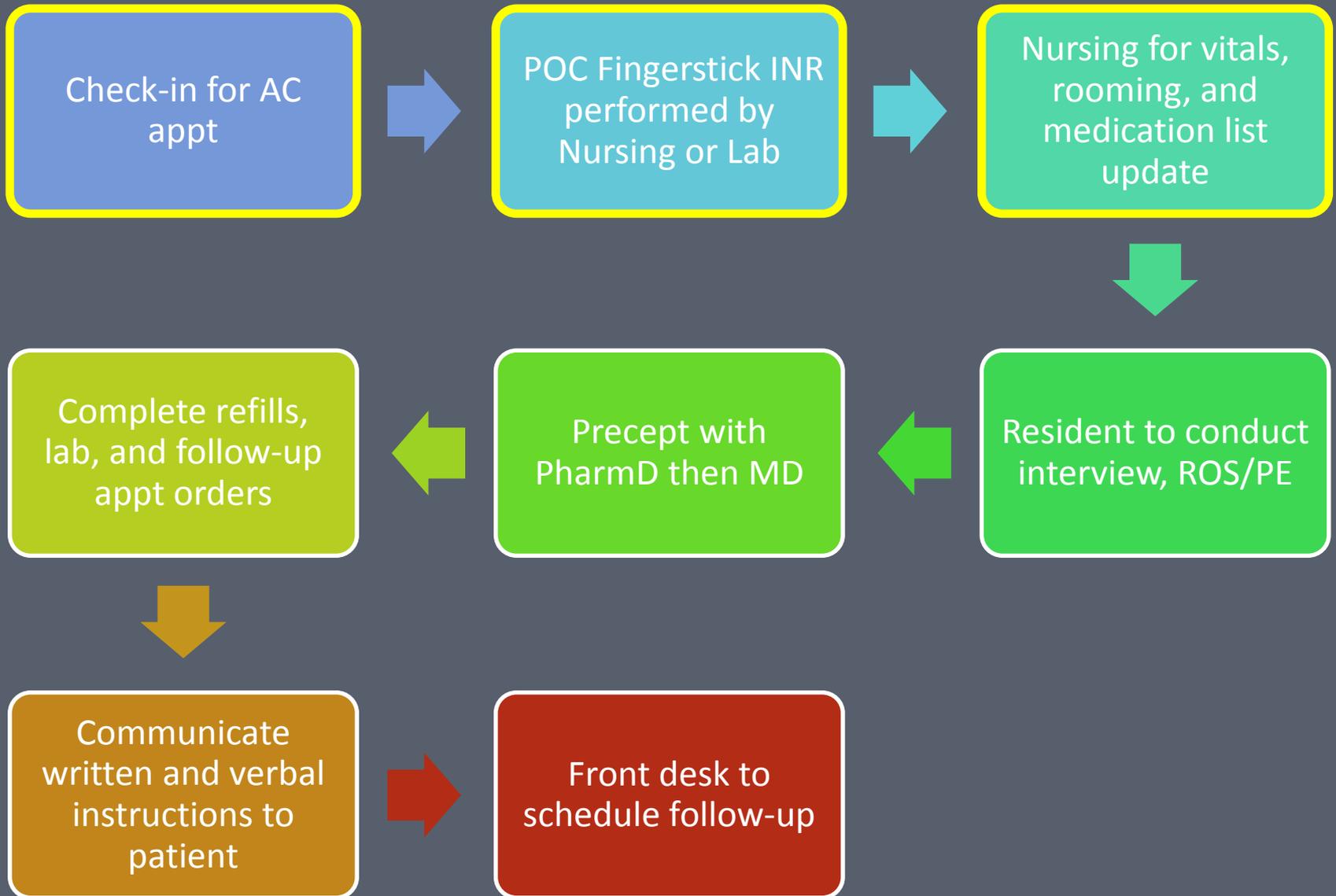
Background

- ETSU Family Medicine Residency Programs
 - Bristol, Johnson City, Kingsport
 - Approximately 6 residents per class at each site
 - Rural-based practice
 - Hospital-based service at 3 different teaching institutions for each site
- Collaborative relationship
 - With ETSU Bill Gatton College of Pharmacy
 - 1 Clinical Pharmacy Faculty member at each site

Patient care design

- Interprofessional Anticoagulation Clinic
 - Resident-driven, PharmD/MD precepted
 - Laboratory, nursing, and staff involvement
- Two **partial** half-days each week at each site

Patient flow



Resident: Conduct interview, ROS/PE

- Prior to entering room
 - Review patient INR history, indication, duration
 - Review patient current INR
 - Open Anticoagulation flowsheet in EMR and enter INR result
 - Pre-visit review by med/pharm students

Problem Notes Labs Procedures Imaging Chart

All Notes by Specialty None

72 of 252 Chart Items (4 Invalid and 114 Audit Items) - Filters Applied

Family Medicine

- 27Nov2012 - Appointment
 - KFM Anticoagulation Note (KFM Anticoagulation Note)
- 06Nov2012 - Appointment
 - KFM Anticoagulation Note (KFM Anticoagulation Note)
- 02Nov2012 - Appointment
 - Established (Established) - Koscinski, Erin; Enc: Kosci
- 22Oct2012 - Appointment
 - sParent Folder - Blackwelder, Reid; Enc: Blackwelder,
 - KFM Anticoagulation Note (KFM Anticoagulation Note)
- 02Oct2012 - Appointment
 - KFM Anticoagulation Note (KFM Anticoagulation Note)
- 18Sep2012 - Appointment
 - KFM Anticoagulation Note (KFM Anticoagulation Note)
- 29Aug2012 - Appointment
 - Established (Established) - Blackwelder, Reid; Enc: BI
- 25Jun2012 - Appointment
 - KFM Anticoagulation Note (KFM Anticoagulation Note)
- 19Jun2012 - Image Encounter
 - sOphthalmology - Blackwelder, Reid; Enc: Blackwede
- 21May2012 - Appointment
 - Established (Established) - Blackwelder, Reid; Enc: BI
- 30Apr2012 - Appointment

Patient Worklist Meds Allergies Orders Appt

Current Medications None Alpha Rec: 18Oct2012

- * Alphagan P 0.1 % Ophthalmic Solution; INSTILL ONE DROP RIGHT EYE TWICE (2) A DAY; Therapy: 19Mar2012 to (Last Rx:19Apr2012) Requested for: 19Apr2012; Status: ACTIVE
- Aspirin EC 81 MG Oral Tablet Delayed Release; Take 1 tablet daily; Therapy: 05Mar2012 to; Status: ACTIVE
- Doxycycline Monohydrate 50 MG Oral Capsule; TAKE 1 CAPSULE EVERY 12 HOURS DAILY; Therapy: 21Aug2012 to (Evaluate:18Sep2012) Requested for: 21Aug2012; Last Rx:21Aug2012; Status: ACTIVE
- Enoxaparin Sodium 100 MG/ML Subcutaneous Solution; INJECT 100 MG Every twelve hours; Therapy: 22Oct2012 to

View New Edit Order D/C Reprint Rx/Resend Rx Continue Completed Today Completed On Personalize

Vital Signs Immunizations FlowSheets Growth Chart

FlowSheets KFM Anticoagulati Family Medicine

Data Includes: All		27 Nov 2012	06 Nov 2012	02 Nov 2012	22 Oct 2012
Item Name	Graph	10:13 AM	9:53 AM (2)	9:53 AM (1)	10:26 AM
Goal INR	<input type="checkbox"/>		2-3		
Reason for anticoagulation	<input type="checkbox"/>		DVT/PE		
Duration of Treatment	<input type="checkbox"/>		25 years		
Prior Daily Dose	<input type="checkbox"/>		6mg dialy		
New Daily Dose	<input type="checkbox"/>				
Prior Weekly Dose	<input type="checkbox"/>				
New Weekly Dose	<input type="checkbox"/>				
Easy bleeding	<input type="checkbox"/>		No		

View New Edit Print New Column Enter Result

Anticoagulation Flowsheet

- Goal INR
- Indication
- Duration of treatment
- Current Warfarin Dose
- Prior Daily/Weekly Dose
- New Daily/Weekly Dose
- PT/INR today
- Missed/extra doses
- Easy bleeding
- Easy bruising
- Focal weakness
- Leg pain/swelling
- Dyspnea/chest pain
- Recent changes in meds/diet
- Nosebleed
- Hematemesis/Hemoptysis
- Hematuria
- Blood in stool
- Antibiotic use
- ASA/NSAID use

Resident: Conduct interview, ROS/PE

- While in room
 - Complete Anticoagulation flowsheet in EMR
 - Complete interview
 - Current status of medications/diet
 - Patient questions/concerns
 - Complete targeted ROS and PE
 - Based on indication for anticoagulation
 - Symptoms of bleeding/bruising/clot/stroke

Resident: Conduct interview, ROS/PE

- Documentation
 - Anticoagulation flowsheet in EMR
 - Anticoagulation note in EMR
 - Billing for level of visit

PharmD: Precept resident

- PharmD to provide continuity in care for patients
- Resident discusses patient with PharmD
 - Determine course of action for that day
 - Determine education/follow-up needed
 - Resident and PharmD present to precepting MD
- Precepting PharmD and/or MD interview and/or physically examine patient as indicated

Complete refills, lab, and follow-up appt orders

- Resident completes any requested refills
 - Anticoagulant
 - Chronic medications as appropriate based on clinical picture and labs
- Resident orders laboratory and clinic follow-up based on anticoagulation plan

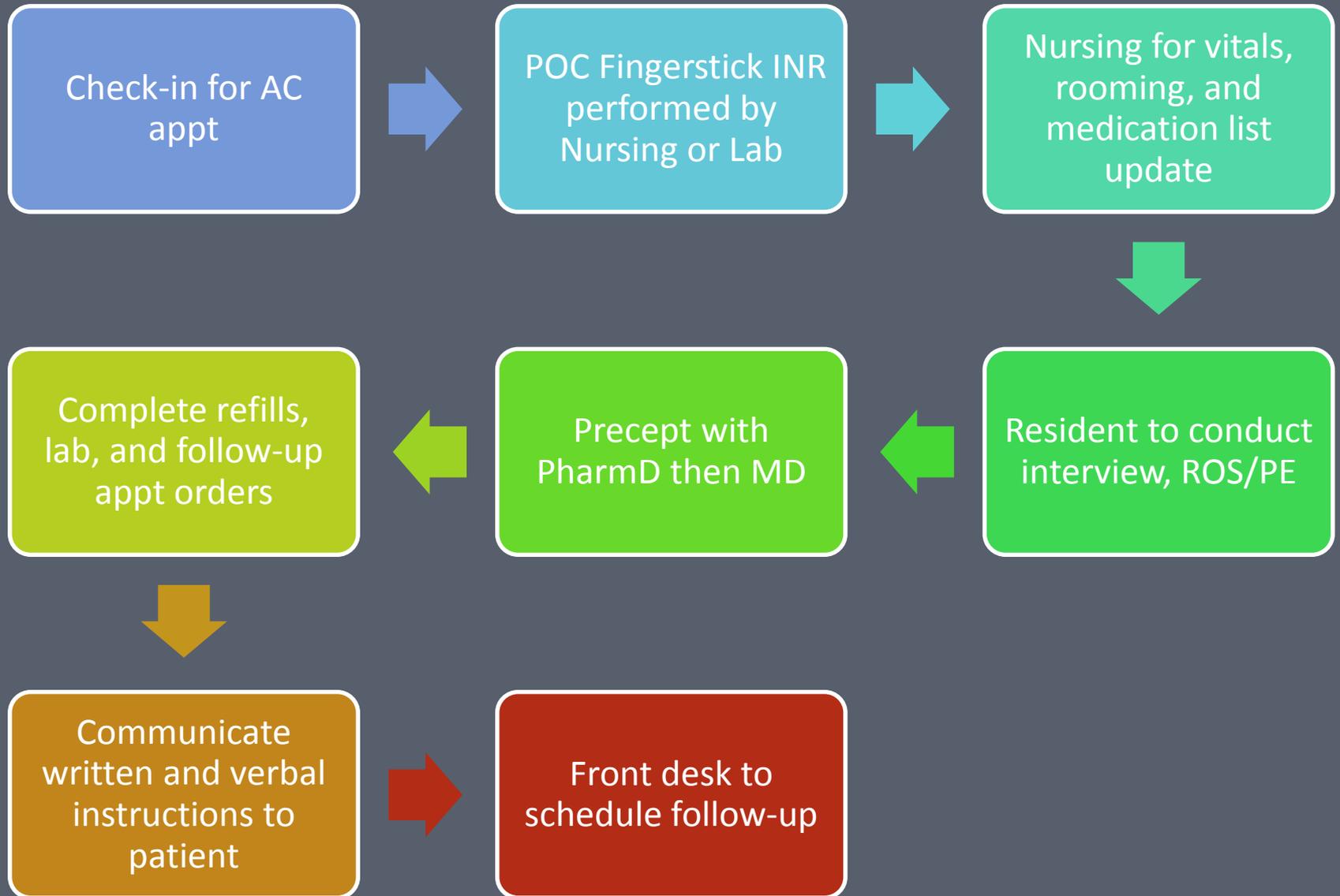
Communicate written and verbal instructions to patient

- Resident provides written instructions to patient
 - INR result
 - Anticoagulation dosing and follow-up plan
 - Clinic contact information
- Resident provides education related to the visit and answers all patient questions prior to discharge
- PharmD observes patient discharge education

Laboratory/front desk to schedule follow-up

- Patient goes to front desk to schedule follow-up AC visit
- When scheduling MD appt, front staff notes *date* and *level (99213, 99212, etc.)* of current AC visit in the comments field of the follow-up visit

Patient flow



Transition Issues

- Thorough communication at all levels of the system to explain the new approach to care – scheduling, coordination with PCP visits, etc
- Significant education to patients up front to explain new system – co-pays/perceptions by patients

Potential Benefits

- Consistent, systematic approach
 - To the care for all patients receiving anticoagulation
 - To the education for Family Medicine residents managing patients on anticoagulation
- Improved time in therapeutic range and decreased bleeding events for patients on anticoagulation

Resident Education

- Didactic: Noon conferences or Inservices
 - Intern: Conduct and rationale for visit, CHEST guidelines, resources
 - 2nd year: Diet and medication interactions, complicated patient cases
 - 3rd year: Transitions in care, perioperative management
 - Inpatient team: Inpatient anticoagulation, new anticoagulants
- Experiential: Patient care visits

Potential Research

- Patient care
 - Satisfaction
 - Outcomes

- Resident
 - Confidence
 - Competency

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Questions?

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