



# Focused Anticoagulation Service in Family Medicine Residencies

ETSU Family Medicine Associates  
Johnson City, Tennessee

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# Disclosures

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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

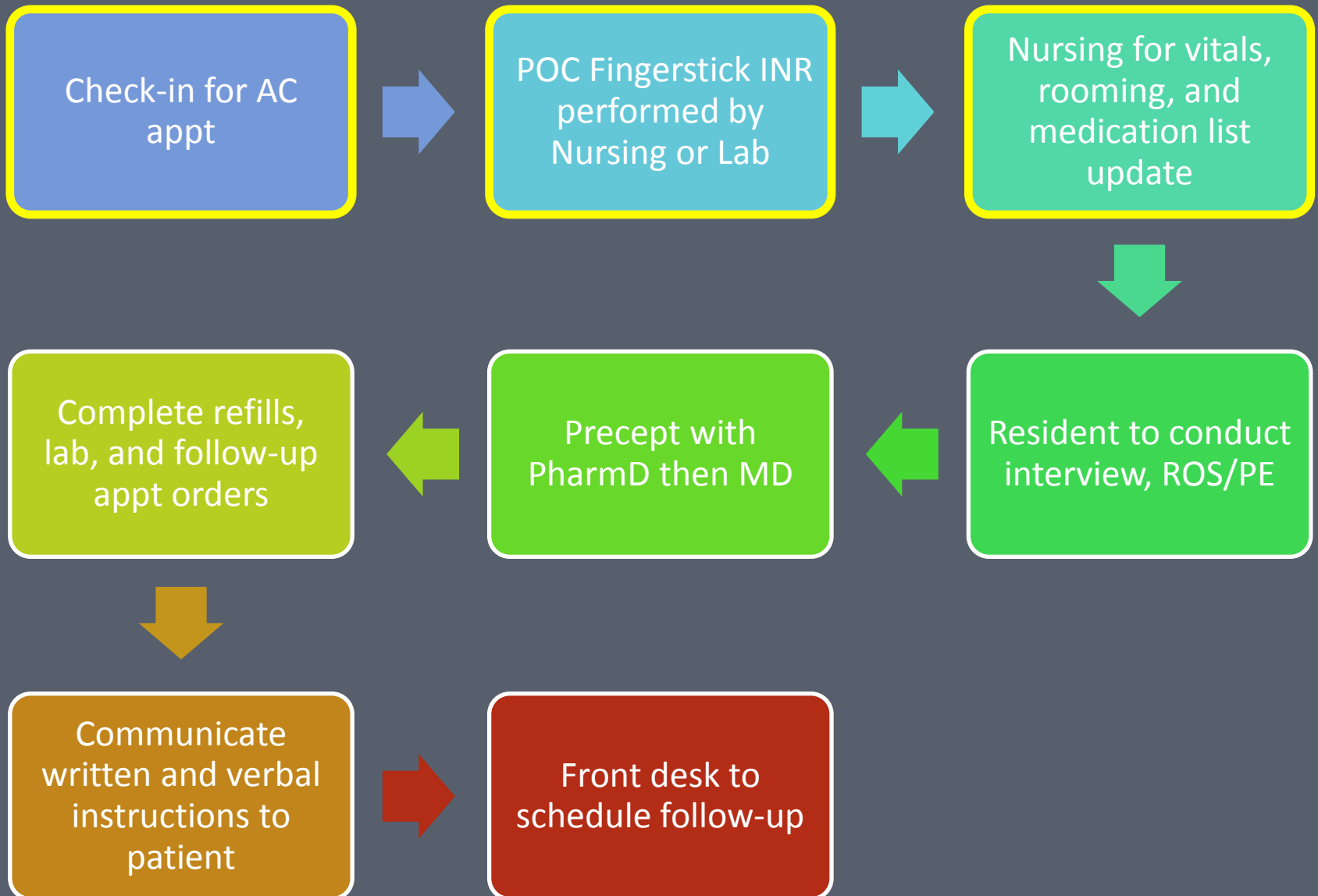
# Background

- 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



Note:  
FYI:  
Security: No Restricted Data

Clinician  
Commit Pat Loc: Checked Out Status: Check-Out Updated: 11:23 AM

- 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: Blackwelde
    - 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

Family

Growth Chart

FlowSheets

KFM Anticoagulation

Family Medicine

Data Includes: All

Item Name

Graph

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27 Nov 2012

10:13 AM

06 Nov 2012

9:53 AM (2)

9:53 AM (1)

02 Nov 2012

10:26 AM

22 Oct 2012

9:22 AM

Goal INR

2-3

Reason for anticoagulation

DVT/PE

Duration of Treatment

25 years

Prior Daily Dose

6mg daily

New Daily Dose

Prior Weekly Dose

New Weekly Dose

Easy bleeding

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*

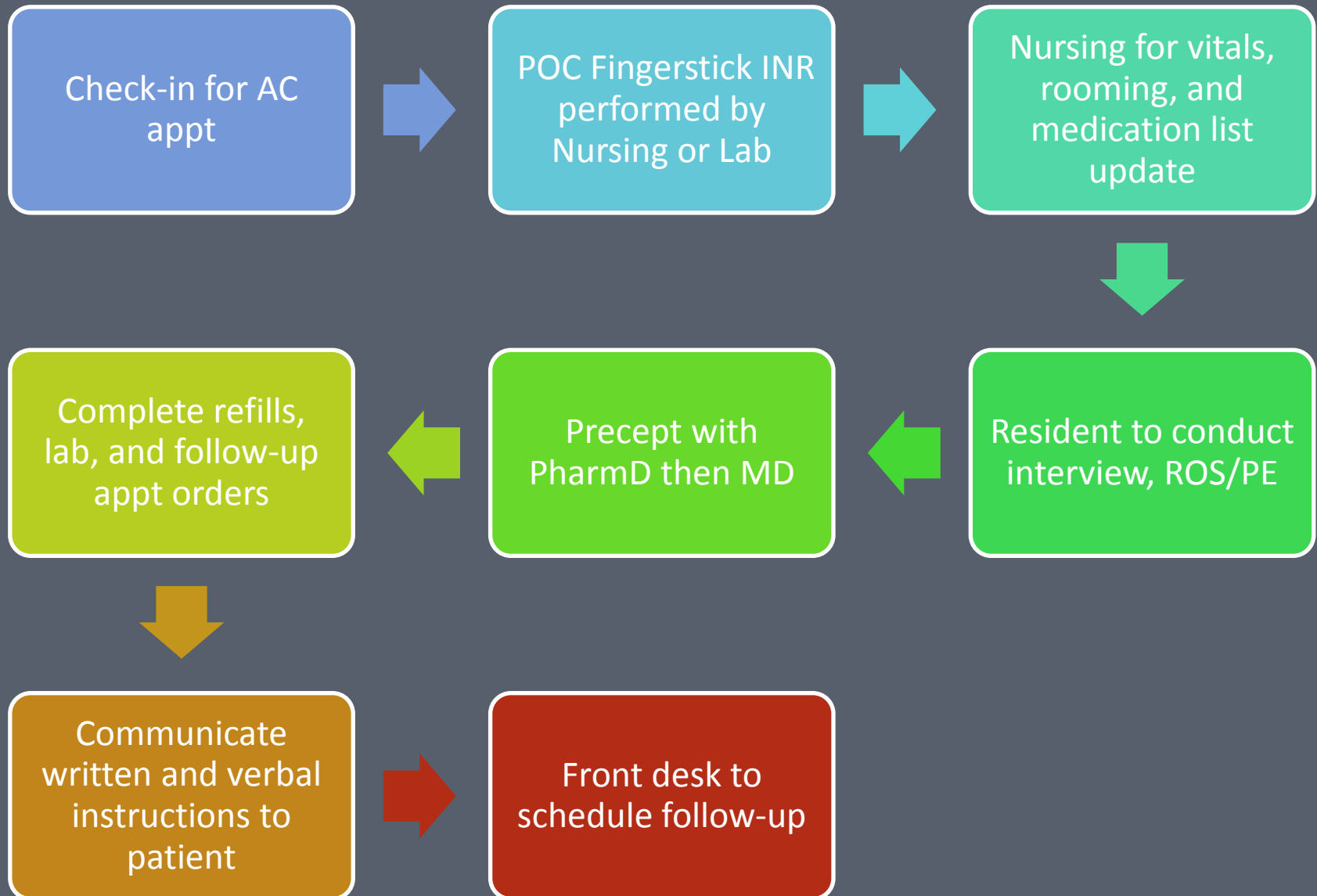
- Resident provides written instructions to patient
  - INR result
  - Anticoagulation dosing and follow-up plan
  - Clinic contact information
- Resident provides education related to the visit and answers all patient questions prior to discharge
- PharmD observes patient discharge education

## *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
  - 2<sup>nd</sup> year: Diet and medication interactions, complicated patient cases
  - 3<sup>rd</sup> 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

# 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



# Questions?

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