

MRPG Anticoagulation Monitoring

Table of Contents

1. Episodes of Care	2
2. INR Results	3
 Decision Point 1– See Appendix	3
3. Dosing Documentation and Re-Checks	4
3.A Dosing/Maintenance Plan.....	4
 Decision Point 2 – See Appendix	4
3.B Editing Maintenance Plan	5
 Decision Point 2 – See Appendix	5
3.C Re-Check	7
 Decision Point 3– See Appendix	7
INR Reminders.....	8
 Decision Point 3– See Appendix	8
Reminder Example Messages	8
Removing the Message –	9
Appendix	10
Decision Point 1 –	10
Decision Point 2 –	10
Decision Point 3 –	10

Anticoagulation Monitoring

1. Episodes of Care

In Epic, Episodes of Care are a way to group like visits together for the same clinical diagnosis.

Patients who are being monitored for Anticoagulation/Coumadin management will all need an Episode of Care created.

The episode allows for documentation of the following items:

- a. Patient's INR goal (range)
- b. Weekly max dose
- c. Target end date or specify Indefinite treatment
- d. INR check location = department managing this patient
- e. Start date of treatment
- f. Provider(s) responsible for patient's coumadin management
- g. INR reminder recipients

Anticoagulation Episode Information			
Anticoagulation Information as of 2/28/2019			
INR goal:	A	Indications:	Add Indications
Weekly max warfarin dose (mg):	B		
Target end date:	C		
	☐ Indefinite		
Anticoagulation Episode Information			
INR check location:	D	Preferred lab:	
Send INR reminders to:	G	Start date:	E 6/6/2018
Comments:			
Select for a provider + Add Other Provider			
Provider	Role	Specialty	Phone Number
		Accept	Cancel

2. INR Results

After the patient visits the lab and the INR test is resulted, a result message will be sent to the InBasket of the ordering/authorizing provider. It will appear in the Results folder.



Decision Point 1– See Appendix

The following appears in the InBasket message:

- The line item for the message
- The patient's most recent value
- The patient's value before

The screenshot shows the InBasket interface with a message titled "PT-INR". The message content includes:

- Status:** Final result
- Visible to patient:** No (Not Released)
- Order:** Portal vein thrombosis
- Ref Range & Units:** 9.9 - 11.6 sec
- PT:** 21.3 (1d ago)
- INR:** 2.2 (1d ago)
- Resulting Agency:** PMA
- Specimen Collected:** 02/27/19 14:45
- Last Resulted:** 02/27/19 17:13
- Previous INR:** 19.5 (3wk ago)

Below the message content is a table with the following information:

Item	Value
Accession #	50 W5506706 20190227144
Ordering Physician	Srivastava, Sunny
Primary Care Provider	Boandoin, Stephen P
Authorizing Provider	Sunny Srivastava
Administering Physician	Sunny Srivastava
Crossing Provider	Sunny Srivastava

Within the InBasket result message is an "AMS" report (Anticoagulation Management)

The following appears in the AMB report:

- The INR episode information
- Recent INR results, date, and dosing decisions

In Basket

↑ My Mess... 5 unread, 9 total

↑ Results (5)

QuickActions

Status Taken By Visit Date Patient Age Test Item Resulted Result Date Pool Provider PI Vegetable L INI P. PC...

Read 02/27/2019 50 yo. PT-INR 1 1 of 1 02/27/2019 X Tisha Bakat, RN Ina...

Deferred from Mobile

Order Dx: Portal vein thrombosis
Current Rx: Isinopril (Oral); warfarin (Oral); warfarin

Result Result Encounter Visit/Patient Info Meds/Problems Visits/Labs My Last Note Help External Result **AMS** Call patient about abnormal result More

Next appt with me: None

Anticoagulation Episode Summary

Current INR goal: 2.0-2.5
TTR: 88.5 % (3.1 wk)
Next INR check: 2/27/2019
INR from last check: No new INR was available at last check
Most recent INR: 2.2 (2/27/2019)
Weekly max warfarin dose: 45 mg
Target end date:
INR check location: Clinic Lab
Preferred lab:
Send INR reminder to: PCG PMA ANTI COAG HAV RN
Comments:

Indications

Portal vein thrombosis (B1)

Anticoagulation Care Providers

Provider	Role	Specialty	Phone number
Sunny Srivastava, MD	Referring	Cardiology	978-521-3288

Recent Review Flowsheet Data

Anticoagulation Monitoring	2/26/2019	2/5/2019	1/26/2019
INR Goal	2.0-2.5	2.0-2.5	2.0-2.5
Assoc. INR Date	-	2/5/2019	1/25/2019
Associated INR	-	2.0	1.3
PL deviation	No	No	No
Sunday dose	-	7.5 mg	7.5 mg
Monday dose	-	5 mg	5 mg
Tuesday dose	7.5 mg	7.5 mg	7.5 mg
Wednesday dose	-	5 mg	5 mg
Thursday dose	-	7.5 mg	-
Friday dose	-	5 mg	-
Saturday dose	-	7.5 mg	7.5 mg
Weekly dose PRESCRIBED	45 mg	45 mg	45 mg
Dose TAKEN over last 7 days	45 mg	45 mg	0 mg
Dose description	range 2.0-2.5 (updated 12/17/18); goes by TABS, no letters, having cap put on dental implant (already has the implant in place) on 2/14 with dr Skeink and does not need to hold coumadin and they do not need INR faxed- see note 1/10	range 2.0-2.5 (updated 12/17/18); goes by TABS, no letters, having cap put on dental implant (already has the implant in place) on 2/14 with dr Skeink and does not need to hold coumadin and they do not need INR faxed- see note 1/10	

Attached

3. Dosing Documentation and Re-Checks

3.A Dosing/Maintenance Plan

Based on the result, the patient's dosing may or may not need to be changed. Regardless, the decision will need to be documented.



Decision Point 2 – See Appendix

1. Because the patient will need to be called – click the telephone button from the result folder.

In Basket

↑ My Mess... 5 unread, 9 total

↑ Results (5)

QuickActions

Status Taken By Visit Date Patient Age Test Item Resulted Result Date Pool Provider PI Vegetable L INI P. PC...

Read 02/27/2019 50 yo. PT-INR 1 1 of 1 02/27/2019 X Tisha Bakat, RN Ina...

Deferred from Mobile

Next appt with me: None

2. Navigate to the "Anti-Coag" Activity > Anticoag Tracking Section.

3. This section allows for documentation of the following:

- INR for dosing this visit. Click the button to Select the most recent INR result
- Maintenance plan
- Date of next INR

Chart Review
Care Everywhere...
PHS Viewer
Care Team P...
SnapShot
Synopsis

 Telephone
Patient Instru...

 Post Dischar...

Health Mainte...
Communicati...
Sign Encounter
Transplant

Anti-Coag

INR goal

2.0-2.5

Start date

1/26/2019

Target end date

Comments

TTR

88.5 % (3.1 wk)

Providers

Sunny Srivastava, MD

Indications

Portal vein thrombosis [I81]

Send INR reminders to

PCG PMA ANTI COAG HAV RN

Warfarin Anticoagulation Tracking

INR for dosing this visit: **A**

INR goal: 2.0-2.5

Select an INR for dosing: **2.2 (2/27/19)**

☐ No INR

External

Current maintenance plan: **B**

5 mg on Mon, Wed, Fri, 7.5 mg all other days

☐ No change

Maintenance plan weekly total: 45 mg

Total dose from past 7 days: 45 mg

Tablets on hand: 5 mg

Today

Feb 10 - Mar 16 2019

Priority:

2 day INR Check

4 day INR Check

7 day INR Check

28 day INR Check

Sun	Mon	Tue	Wed	Thu	Fri	Sat
10 7.5 mg	11 5 mg	12 7.5 mg	13 5 mg	14 7.5 mg	15 5 mg	16 7.5 mg
17 7.5 mg	18 5 mg	19 7.5 mg	20 5 mg	21 7.5 mg	22 5 mg	23 7.5 mg
24 7.5 mg	25 5 mg	26 7.5 mg	27 2.2 5 mg	28 7.5 mg	Mar 1 5 mg	2 7.5 mg
3 7.5 mg	4 5 mg	5 7.5 mg	6 5 mg	7 7.5 mg	8 5 mg	9 7.5 mg
10 7.5 mg	11 5 mg	12 7.5 mg	13 5 mg	14 7.5 mg	15 5 mg	16 7.5 mg

Suggested INR date: None

Date of next INR: **C**

Resolve Episode

Description:

Restore

Close

Patient was not given dosing instructions

3.B Editing Maintenance Plan

Editing the maintenance plan allows for changes in the current dosing plan.



Decision Point 2 – See Appendix

- Click the pencil next to the plan to edit.

Care Team P...
SnapShot
Synopsis

Telephone
Patient Instru...

Warfarin Anticoagulation Tracking

INR for dosing this visit: 2.2 (2/27/19) INR goal: 2.0-2.5
 Select an INR for dosing: 2.2 (2/27/19) ☐ No INR + External

Current maintenance plan: 5 mg on Mon, Wed, Fri, 7.5 mg all other days No change Start Over
 Maintenance plan weekly total: 45 mg Tablets on hand: 5 mg
 Total dose from past 7 days: 45 mg

2. There are 3 options for defining the patient's maintenance plan
 - a. Daily = same dose everyday

Edit Warfarin Maintenance Plan

Tablets the patient has on hand: 5 mg and

☐ Do not use the maintenance plan

Previous maintenance plan: 5 mg on Mon, Wed, Fri, 7.5 mg all other days

Every Day Weekly Alternating Weekly total: 0 mg

5 mg tablet tabs

Start date: 2/28/2019 Today Tomorrow

Accept Cancel

- b. Weekly = different dose each day

Edit Warfarin Maintenance Plan

Tablets the patient has on hand: 5 mg and

☐ Do not use the maintenance plan

Previous maintenance plan: 5 mg on Mon, Wed, Fri, 7.5 mg all other days

Every Day **Weekly** Alternating Weekly total: 0 mg

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
5 mg tablet	tabs	tabs	tabs	tabs	tabs	tabs	tabs

Start date: 2/28/2019 Today Tomorrow

Accept Cancel

- c. Alternating = different dose in a repeatable pattern (ie. Every other day)

Edit Warfarin Maintenance Plan

Tablets the patient has on hand: and

☐ Do not use the maintenance plan

Previous maintenance plan: 5 mg on Mon, Wed, Fri; 7.5 mg all other days

Average weekly total: 0 mg

Repeats every days ☒ Start on the first day of the plan

5 mg tablet tabs tabs

 

Start date:

Complete the dosing instructions.

3. Once the maintenance plan is updated, the calendar will update to show appropriate dose for each calendar day.

New maintenance plan: 5 mg, then 2.5 mg repeating every 2 days

Maintenance plan average weekly total: 26.25 mg ↓ 41.7% 

Total dose from past 7 days: 45 mg 

Today ← **Feb 10 - Mar 16** →  Priority: 

Sun	Mon	Tue	Wed	Thu	Fri	Sat
10 7.5 mg	11 5 mg	12 7.5 mg	13 5 mg	14 7.5 mg	15 5 mg	16 7.5 mg
17 7.5 mg	18 5 mg	19 7.5 mg	20 5 mg	21 7.5 mg	22 5 mg	23 7.5 mg
24 7.5 mg	25 5 mg	26 7.5 mg	27 2.2 5 mg	28 5 mg	Mar 1 2.5 mg	2 5 mg
3 2.5 mg	4 5 mg	5 2.5 mg	6 5 mg	7 2.5 mg	8 5 mg	9 2.5 mg
10 5 mg	11 2.5 mg	12 5 mg	13 2.5 mg	14 5 mg	15 2.5 mg	16 5 mg

3.C Re-Check

The Date of Next INR field is used to document when the patient should have their next lab draw. It also controls the INR reminder message.



Decision Point 3— See Appendix

There are 2 options for populating Date of Next INR:

- Select one of the # day INR Check buttons. This will populate a suggested date. Clicking the Suggested INR date button will pull that date into the Date of next INR field.
- Manually type a date of your choosing

New maintenance plan: 5 mg, then 2.5 mg repeating every 2 days

Maintenance plan average weekly total: 26.25 mg ↓ 41.7%

Total dose from past 7 days: 45 mg

☐ No change

Tablets on hand: 5 mg

Today ← Feb 10 - Mar 16 → 2019 Priority:

Sun	Mon	Tue	Wed	Thu	Fri	Sat
10 7.5 mg	11 5 mg	12 7.5 mg	13 5 mg	14 7.5 mg	15 5 mg	16 7.5 mg
17 7.5 mg	18 5 mg	19 7.5 mg	20 5 mg	21 7.5 mg	22 5 mg	23 7.5 mg
24 7.5 mg	25 5 mg	26 7.5 mg	27 2.2 5 mg	28 5 mg	Mar 1 2.5 mg	2 5 mg
3 2.5 mg	4 5 mg	5 2.5 mg	6 5 mg	7 2.5 mg	8 5 mg	9 2.5 mg
10 5 mg	11 2.5 mg	12 5 mg	13 2.5 mg	14 5 mg	15 2.5 mg	16 5 mg

A

Suggested INR date: **A** 3/28/2019

Date of next INR: **B**

Description:

INR Reminders



Decision Point 3— See Appendix

After a patient is enrolled in anticoagulation therapy and receiving regular INR checks, INR Reminder messages are sent automatically to the group of clinicians responsible for monitoring a patient's anticoagulation therapy. These messages are sent when a patient is due for an INR test or when a patient is overdue for an INR. After receiving this reminder, clinicians can set up the next INR test for the patient.

The timing of the message depends on how the date was entered in the Date of next INR field (Section 3.C, bullet B in this document).

- Using one of the provided # day INR Check buttons will send a message 2 days AFTER the date in the Date of next INR field
- Manually typing the date of your choosing will send a message on the date in the Date of next INR field

Reminder Example Messages

Patient On Time:

- Patient Name
- Date the message was sent/received

- c. Date the patient is/was due for next INR
- d. Date and Value of last INR

***In this example; Susan was due to have lab work on 2/27. She went on 2/27 and the result was 2.9

C	A		D	B
INR Due Date	Patient	Provider	INR (Date)	Date Sent
02/27/2019	Adams, Susan	Alan I Glaser, MD	2.9 (2/27/2019)	02/27/2019

Patient Overdue:

- a. Patient Name
- b. Date the message was sent/received
- c. Date the patient is/was due for next INR
- d. Date and Value of last INR

***In this example; John was due to have lab work on 2/26. However, the last time John went to the lab was 2/5

C	A		D	B
INR Due Date	Patient	Provider	INR (Date)	Date Sent
02/26/2019	Smith, John	Arun Mukherjee, MD	2.5 (2/5/2019)	02/26/2019

Removing the Message –

The message will remain in the In Basket folder until the patient's maintenance plan is updated and a new, future re-check date is entered.

Appendix

Decision Point 1 –

Who will monitor incoming INR results?

1. Nurses can attach to provider's In Baskets and look for these messages
2. Providers can be the sole monitor of these messages and forward them to nurses if they like

Decision Point 2 –

Who will start the telephone encounter and update the maintenance plan

1. Either the nurse or the provider can start the telephone encounter and update the maintenance plan. A telephone encounter can be created from the Result message or at any time from the Epic button.
2. Provider – the provider can review the message from their In Basket, start the encounter, update the maintenance plan, and route the encounter to the nurse to review and call the patient
3. Nurse
 - a. The provider can review the message from their In Basket, create a result note with dosing instructions and return date, forward the Result Note to the nurse. The nurse can start the telephone, update the maintenance plan, call the patient and document.
 - b. The nurse can attach to the provider's In Basket, review the message from the Provider's In Basket, start the encounter, update the maintenance plan, call the patient and document.
 - i. The nurse can complete the INR message from the provider's In Basket and cc the provider on the telephone call documentation
 - ii. The nurse can leave the result in the providers In Basket and make a comment on the result of their actions

QuickActions	X Done	✓ Mark Reviewed	+ Take	U Result Release	Result Note	Letter	Comment	Result Flowsheet	More
Status	Visit D.	Patient	Test	New	Resulted	Result Date	Provider	Has a Note	
! Pend	02/27/2019		PT-INR	1	1 of 2	02/27/2019		Updated patient to 5mg daily - recheck in 2 weeks	

Decision Point 3 –

What is the preferred timing of the INR Reminder message?

1. The same date as the "Date of next INR"
2. 2 days after the "Date of next INR"

Who will manage INR reminder messages?

1. PeC Enterprise standard is to send these messages to the nurse pool.

961NY	Developmental testing NP Yes f/u
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