Anticoagulation Control in Ambulatory Care
Discussion of Best Practices for Measurement and Management of Anticoagulation
December 2014

Background
Anticoagulation control management in primary care affects many patients and is an important topic for ICSI members. At the request of members, ICSI convened two meetings to discuss:

1. Best practices for anticoagulation measurement and management in primary care,
2. EHR tools for data tracking and documentation of INR measurements for managing INR patient population.

This document summarizes best practice learnings from the two meetings held in June and October 2014.

Discussion
1. ANTICOAGULATION MEASUREMENT AND MANAGEMENT IN PRIMARY CARE

Anticoagulation Measurement Methodologies
Most ICSI members represented at the meetings use the Rosendaal method for measuring INR therapeutic time in range (INR TTR). Some use cross-sectional point in time methodology and compare the results with the Rosendaal method. One member uses the same formula as Medicare (patient days of follow-up within the range over total number of patient days included in the follow-up period). The group concluded that any one method would be fine for measurement. The most important thing is that the methodology is used consistently.

Best Practices for Anticoagulation Management and Opportunities for Improvement
Along with measurement, the best practices for management of anticoagulation in primary care and opportunities for improvement were discussed. Meeting participants identified the following:

Provider training and expertise
• Nurse training and focus on INR clinic. It was suggested that INR nurses have a sole focus on INR management to help them build experience and expertise over time. It is also important that nurses continue to be proactive about their training and education on best practices.
• Importance of mentors. New INR nurses benefit from experienced nurses and providers in that they have someone to ask questions and learn from. It also helps new nurses feel supported in their work.

INR Protocols and Documentation
• Standardization of INR protocols and policies and EPIC documentation. It is especially helpful to new nurses to have standard protocols in place when they start out. It is also important to have policies established with regard to frequent EPIC documentation so
that the patient’s most current INR information is available to multiple providers when they need it.

- EPIC personnel should be included as part of the INR team so they are involved from the beginning and understand what needs to be included in the EMR for tracking and reporting of INR TTR data.

**Provider Champions**

- Physicians and pharmacists who champion INR protocols and policies can help gain buy-in from all staff involved in INR care, increasing the likelihood that the protocols and policies will be followed and information documented.

**Care Delivery**

- **Frequency of testing.** It is important to establish the frequency of INR testing for the patient (i.e. weekly or biweekly) and ensure that they follow the schedule. Patients can also test at home, but the quality may vary if:
  - Patients are not properly trained on how to use the home machine.
  - The machine used at home is different from the machine that the primary care office uses. The machines clinics and patients use at home should be the same to provide consistent measurement (different machines may provide different measurement readings, and thus inconsistent results for INR follow-up management).
  - Patients are incorrectly reporting their numbers to the nurse. Audit checks of INR results from home machines should be performed at least twice a year to check the home results. If patients are not appropriately reporting their numbers, their INRs should be monitored in the clinic.

- **Use of coagucheck (instruments for INR monitoring) at point of care.** All participants at the meeting mentioned using this as part of standard care.

- For patients with a pattern of intermittent high values, different management approaches from TTR measurement may be needed. In such cases, chromogenic tests can be ordered by a nurse to monitor anticoagulation. The nurse can continue to monitor the patient and the physician can evaluate. Separate protocols from INR TTR should be established for chromogenic tests.

- Some clinics have found that focusing on management of lower INR TTR values helped them make the most improvement in reaching their INR TTR goals.

- **Hospital to clinic transitions.** There are challenges with communicating information from the hospital to the clinic, particularly if the hospital and clinic do not use the same EMR or patients are out-of-network. Standard communication tools for patient discharges can be created to improve the transition.

- Cancer patients may be more difficult to manage since in addition to anticoagulants, they take cancer medications that may interact with the effectiveness of anticoagulants. Communication between oncology and INR staff is imperative in ensuring the treatments are coordinated. Furthermore, separate protocols should be established on how best to manage cancer patients on anticoagulants.

- **Patient education on INR monitoring and follow-up.** The INR care team can set up a 12-month calendar in the EMR pre-filled with information for patients on which
anticoagulant dosage they are on, stop and restart dates, and when to come back to the clinic for further monitoring.

Data Reporting

- **Frequent reporting of INR TTR data.** The teams should frequently evaluate data to learn how to modify care processes to improve their INR TTR results.

2. **EHR tools for data tracking and documentation of INR measurements**

Documenting and tracking INR data for each patient is important. Providers need to see the INR trends over time to ensure the best care for patients. Care processes can also be modified based on data to ensure that the best quality care is given to patients. Following are the main takeaways from discussions on using EHRs to manage INR patient population:

- Generate monthly reports from the EHR on expired consult orders, overdue patients, patients not in control and review targeted end dates
- Data should be pulled daily and patients called to schedule follow-ups
- Use EHR alerts to notify providers of interacting medications or other patient safety issues
- Use the “in basket” system (for those clinics with EPIC) to communicate information back and forth between providers and nurses
- Create forms that summarize patient findings, progress notes, medications, and instructions for patients
- INR clinic nurses should review data and communicate the results to providers to get feedback on what changes are needed. In some clinics, providers also review data and nurses and providers discuss together the changes that need to be made.
- INR data reports can be used to report back to the clinic administrator on the number of patients managed in the clinic, the rate of patients who are in range, and the rate of patients in high and low range. These can be generated using Crystal reports.

3. **Meeting Participants**

ACMC: Jo DeBruycker  
Allina: Karly Fritz, Kathleen Keller, Megan Pyfferoen Cooper  
Baldwin: Jean Peavey  
CentraCare: Nicole Aagesen, Kathy Katka, Steve Reichl, Carol Langner, Alicia Groth, Peggy Christensen  
Fairview: Mike Frakes  
HealthEast: Ann Weis, Carli Palmer  
Montevideo: Jean Frederickson  
HealthPartners: Lisa Aker, Tessa Kerby, Jo McLaughlin, Penny Moran, Lindsey Colbert  
HCMC: Jennifer Kelley  
Hutchinson Health: Glen Kegley  
Lake Region Healthcare: Jodi Nuss, Jen Anderson  
Park Nicollet: Vicky Schneider