COVERYS

Anticoagulation Self-Assessment Tool – SAMPLE

Facility Name:_____

Assessment Date: _____

Anticoagulation Program and Guidelines				
		Met – 1 Not Met – 0	**N/A**	**Comments**
A.	Does the organization have a pharmacy-lead anticoagulation management service? What does the service include? Dosing? Monitoring? Patient education?			
Rationale	**From the Pennsylvania Patient Safety Authority**: "The Joint Commission's 2008 National Patient Safety Goal 3E to improve the safe use of medications includes the new requirement to reduce the likelihood of patient harm associated with anticoagulation therapy medications such as heparin (unfractionated), low-molecular-weight heparin, warfarin, and other anticoagulant drugs.[a] These medications require comprehensive dosing and monitoring strategies to minimize the risks associated with their use and to maximize patient outcomes."(1) **From The Joint Commission (National Patient Safety Goal NPSG.03.05.01):** "Reduce the likelihood of patient harm associated with the use of anticoagulant			

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Anticoagulation Program and Guidelines				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	therapy."[Note omitted](2) **From Anticoagulation Management Services: Entering a New Era:** "The anticoagulation clinics of the future will be the ones that will expand to multidisciplinary comprehensive thrombosis programs (both inpatient and outpatient) that will focus on management of the whole spectrum of thrombotic diseases and on coordination of various antithrombotic therapies."(3) **From IHI:** "When pharmacists manage an anticoagulation service, they assume all responsibility for implementation and maintenance of anticoagulant therapy. Physician orders determine that the patient will receive the therapy and specify the desired range for the International Normalized Ratio (INR) value. But pharmacists determine the appropriate initial dose and then review clinical information daily to determine whether adjustments are needed. Allowing pharmacists to manage an anticoagulation service results in greater efficiency for pharmacists, nurses, and			

Anticoagulation Program and Guidelines				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	physicians, who don't have to spend time making phone calls to report lab values or check for changes in dosing orders. The pharmacists make adjustments to the dose in a timelier fashion — a benefit to the patient that reduces the chance of an adverse drug event."(4)			
B.	Are guidelines, dosing scales, and/or checklists for anticoagulants readily accessible to prescribers, pharmacists, and nurses when anticoagulants are prescribed, dispensed, and administered?			
Rationale	**From ISMP:** "Current protocols, pathways, guidelines, nomograms, order sets, flow sheets and/or checklists for antithrombotic therapy are readily accessible, in print or electronic form, to physicians, pharmacists, and nurses; and used when antithrombotics are prescribed, dispensed, and administered."(5)			
C.	Are disease specific protocols in place for guiding the appropriate use of heparin and warfarin (Heparin: stroke, cardiac disease and DVT; Warfarin: atrial fibrillation, DVT, PE)?			
Rationale	*See National Action Plan for Adverse Drug Prevention (6)*			

Anticoagulation Program and Guidelines				
		Met – 1 Not Met – 0	**N/A**	**Comments**
D.	Is there electronic capability to use process control charts to display trends in patient INR values and to assist with dosing oral anticoagulants, especially warfarin?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Process control charts can be used to display trends in INR values for patients and to assist with dosing oral anticoagulants, especially warfarin.[a]" (15)			
E.	Are patients assessed for risk factors, such as having heparin-induced antibodies and heparin- induced thrombocytopenia (HIT), to avoid life-threatening events from heparin exposure?			
Rationale	**From The Joint Commission:** "Identify patients with heparin-induced antibodies and heparin- induced thrombocytopenia (HIT) to avoid life- threatening events from heparin exposure.[a]" (16)			
F.	Is a process in place that addresses hold orders and a reminder to consider reinstating an order that has been held?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Functional drug alerts, such as hard stops, that prevent a			

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Anticoagulation Program and Guidelines				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	provider from ordering two anticoagulants at a time without giving a reason may prevent duplication of therapy.[a]" (8)			
G.	Is an independent double-check required before the start of a heparin infusion and with each change of the container or rate of infusion? What is required as part of the independent double-check (i.e., are staff members checking the drug, concentration, dose calculation, rate of infusion, pump settings, line attachment and patient identity)?			
Rationale	**From The Joint Commission:** "Consolidate and limit the number of institutional unfractionated heparin dosing nomograms. [a, b] For all heparin medication orders (inpatient and outpatient), require prescribers to include the calculated dose and the dose per weight (e.g. milligrams per kilogram) or body surface area to facilitate an independent double-check of the calculation by a pharmacist, nurse or both. ***NOTE:*** *For morbidly obese patients, the standard nomograms may not be accurate."* (9)			
H.	Have anticoagulants been designated as time- critical scheduled medications in a policy and in the EMR system?			

Anticoagulation Program and Guidelines				
		Met – 1 **Not Met – 0**	**N/A**	**Comments**
Rationale	**From CMS:** "Time-critical scheduled medications are those for which an early or late administration of greater than thirty minutes might cause harm or have significant, negative impact on the intended therapeutic or pharmacological effect. Accordingly, scheduled medications identified under the hospital's policies and procedures as time-critical must be administered within thirty minutes before or after their scheduled closing time, for a total window of 1 hour." (10)			
I.	When a new oral anticoagulant is added to the organization's formulary, are protocols (including oral anticoagulant reversal protocols) reviewed and brought up to date?			
Rationale	Organizations may consider proactively developing protocols, even if the product is not on the formulary, in anticipation of a patient being admitted on a target-specific anticoagulant.			
J.	Are concentrations for infusions for heparin standardized to a single concentration for adults? For pediatric patients?			
Rationale	**From The Joint Commission:** "Consolidate and limit the number of institutional unfractionated heparin dosing			

Anticoagulation Program and Guidelines				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	nomograms. [a, b] For all heparin medication orders (inpatient and outpatient), require prescribers to include the calculated dose and the dose per weight (e.g. milligrams per kilogram) or body surface area to facilitate an independent double-check of the calculation by a pharmacist, nurse or both. ***NOTE:*** *For morbidly obese patients, the standard nomograms may not be accurate."* (11)			

Ordering and Prescribing				
		Met – 1 Not Met – 0	**N/A**	**Comments**
A.	Is standardized baseline information, such as weight in kilograms and serum creatinine function, required to be obtained and documented on an anticoagulation checklist prior to ordering anticoagulants?			
Rationale	**From IHI:** "Selecting heparin doses based on weight has been found to provide Partial Thromboplastin Time (PTT) results that are more likely to be within the desired therapeutic range and to fluctuate less when doses are adjusted. A protocol can help clinical personnel quickly and			

Ordering and Prescribing				
		Met – 1 **Not Met – 0**	**N/A**	**Comments**
	accurately select the appropriate dosage based on the patient's weight and PTT values." (12)			
B.	Is the age of the patient considered during dosing (i.e., alert to signal if patient is elderly)?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Elderly patients may require lower starting doses for oral anticoagulants, depending on the agent ordered, because of reduced renal function or, in some instances, lower body weight.[a]" (13)			
C.	Is there capability to have the current calculated creatinine clearance and/or other labs such as platelet count displayed during electronic prescribing to prevent errors?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "The dose of some of the target- specific agents requires adjustment based upon patient characteristics (e.g., renal function, body weight). Therefore it is important to standardize the baseline information, such as weight in kilograms and serum creatinine function, needed during the ordering of oral anticoagulants. [a] Also, having a standardized process for updating computer systems and healthcare records is important. Displaying the current			

Ordering and Prescribing				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	calculated creatinine clearance during electronic prescribing is helpful to prevent errors.[a, b, c]" (14)			
D.	Is there electronic capability to use process control charts to display trends in patient INR values and to assist with dosing oral anticoagulants, especially warfarin?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Process control charts can be used to display trends in INR values for patients and to assist with dosing oral anticoagulants, especially warfarin.[a]" (15)			
E.	Are patients assessed for risk factors, such as having heparin-induced antibodies and heparin- induced thrombocytopenia (HIT), to avoid life-threatening events from heparin exposure?			
Rationale	**From The Joint Commission:** "Identify patients with heparin-induced antibodies and heparin- induced thrombocytopenia (HIT) to avoid life-threatening events from heparin exposure.[a]" (16)			
F.	Is a process in place that addresses hold orders and a reminder to consider reinstating an order that has been held?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Dose			

Ordering and Prescribing				
		Met – 1 **Not Met – 0**	**N/A**	**Comments**
	omissions that were seen often were in part a result of orders that were held and not reinstated. Establishing a standard process and following a strategy for handling 'hold' orders is vital. Having an active order or reminder listing the drug, route, and frequency, with clear annotation on the records to ensure that a dose is prescribed each day according to lab values in both the pharmacy and MARs, may help minimize omissions.[a, b]." (17) **From The Joint Commission:** "Promptly re- evaluate patients whose anticoagulant is being held for a procedure. The re-evaluation should include an assessment of the need to reorder anticoagulant therapy." (18)			
G.	Can warfarin be automatically stopped according to an automatic stop policy/order, without verifying the drug's indication and notifying the prescriber?			
Rationale	**From The Joint Commission:** "Do not automatically discontinue warfarin according to automatic stop policies without verifying the drug's indication and contacting the prescriber." (19)			
H.	Is a standard protocol in place for rapid or emergent			

Ordering and Prescribing				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	reversal of anticoagulation and the expected restarting of anticoagulants?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Standard protocols for rapid or emergency reversal of anticoagulation and expected restarting of anticoagulants can be useful tools for use in institutions. The effects of some reversal agents such as phytonadione continue for up to a week; therefore, use of national guidelines for guidance on restarting anticoagulation if indicated may be helpful.[a]" (20)			

Provider Education				
		Met – 1 Not Met – 0	**N/A**	**Comments**
A.	Are providers educated about the inpatient anticoagulation management tools, services/programs, checklist, and documentation requirements? If so, how often?			
B.	Are evidenced-based tools provided to providers or available in the EMR system?			
C.	Are annual competency assessments required for clinicians who prescribe and dispense oral anticoagulants, to ensure			

Provider Education				
		Met – 1 **Not Met – 0**	**N/A**	**Comments**
	that the clinicians understand the different oral anticoagulant medications and their uses in therapy?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Develop formal anticoagulation competencies for physicians, pharmacists, and nurses to assess baseline and ongoing knowledge about anticoagulation therapy, thromboembolism, HIT, and allergies including a competency demonstration process to assess ability to apply safe practice concepts. [a, b, c, d]" (21) **From the Pennsylvania Patient Safety Authority:** "Annual competence assessments for clinicians who prescribe, dispense, or administer oral anticoagulants help to ensure clinicians understand different oral anticoagulant medications and their uses in therapy.[a]" (22)			
D.	When a new anticoagulant is added to the organization's formulary, is the medical staff notified through tools such as newsletters and in-service programs?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Studies show that even with continuous offerings for educational programs on therapeutic agents, healthcare			

Provider Education				
		Met – 1 **Not Met – 0**	**N/A**	**Comments**
	professionals find it difficult to keep completely up to date through independent effort. Therefore, providing relevant and reliable information may be helpful.[a]" (23)			
E.	Are prescribers educated about the risks in combining oral anticoagulants with oral antiplatelet agents, such as clopidogrel (increases bleeding risk)?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Combining oral anticoagulants with oral antiplatelet agents such as clopidogrel, although potentially useful in some situations, increases bleeding risk, and expertise in therapy management is critical.[a]" (24)			
F.	Are providers educated to avoid using the abbreviation NOAC?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "'NOAC' has been used in medical literature as an abbreviation for the target- specific, or 'novel,' oral anticoagulants. Unfortunately, this abbreviation has been misunderstood as 'no anticoagulation' and may contribute to unintended discontinuation of the medication, leading to dose omissions.[a] ISMP recommends the abbreviation be prohibited, as it is prone to error and misinterpretation." (25)			

Staff Member Education				
		Met – 1 Not Met – 0	**N/A**	**Comments**
A.	Are annual competency assessments required for staff members who administer oral anticoagulants, to help to ensure that the staff members understand different oral anticoagulant medications and their uses in therapy?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Develop formal anticoagulation competencies for physicians, pharmacists, and nurses to assess baseline and ongoing knowledge about anticoagulation therapy, thromboembolism, HIT, and allergies including a competency demonstration process to assess ability to apply safe practice concepts. [a, b, c, d] Identify key interdisciplinary champions.[e]" (26)			
B.	Are common indications, monitoring requirements, safety implications to prevent complications, and patient/family member educational needs regarding anticoagulation part of the competencies?			
Rationale	**From Anticoagulation Drugs: What Nurses Need to Know:** "The goal of this CE activity is to provide nurses and nurse practitioners with knowledge and skills to manage patients on anticoagulant drugs. After reading this article, you will be able to: Identify common indications for use of anticoagulants; Describe monitoring requirements;			

Staff Member Education				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	Consider important safety implications to help prevent complications; Discuss patient/family educational needs related to anticoagulants" (27)			
C.	When a new anticoagulant is added to the organization's formulary, are staff members notified through tools such as newsletters and in-service programs?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Studies show that even with continuous offerings for educational programs on therapeutic agents, healthcare professionals find it difficult to keep completely up to date through independent effort. Therefore, providing relevant and reliable information may be helpful.[a]" (28)			
D.	Is all intravenous heparin is administered via a smart pump?			
Rationale	From The Joint Commission: "When heparin is administered intravenously and continuously, use programmable pumps in order to provide consistent and accurate dosing." (29)			
E.	Are titrated heparin protocols only allowed to be administered in critical care settings?			
F.	Are hands-on annual competencies required for all RNs			

Staff Member Education				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	working with heparin and other high-risk anticoagulants (e.g., TpA, Activase, Retevase)?			
G.	Do all infusion rate changes require a double- check verification?			
Rationale	**From The Joint Commission:** "Before the start of a heparin infusion and with each change of the container or rate of infusion, require an independent double check of the drug, concentration, dose calculation, rate of infusion, pump settings, line attachment and patient identity." (30)			

Patient Education				
		Met – 1 Not Met – 0	**N/A**	**Comments**
A.	Are patients educated about the risks and potential for error associated with anticoagulants that are changed frequently? What strategies are provided to help patients prevent injury after discharge?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Remind patients that the risks of anticoagulants include bleeding but that there are also risks of clotting from the underlying condition due to inadequate anticoagulation when doses are missed.[a] Tools exist, such as ISMP's			

Patient Education				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	patient counseling sheets, which can be shared with patients to help prevent errors with warfarin.[b]" (31)			
B.	Is a patient's ability to afford and purchase oral anticoagulant agents assessed as a risk issue related to adhering to therapy? If so, is case management/ financial/social services consulted prior to discharge to prevent situations in which a patient is forced to omit a dose for financial or other reasons (e.g., inability to pick up prescriptions or obtain routine blood work)?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "The patient's ability to afford and purchase oral anticoagulant agents can impact adherence to therapy. Consider involving case management services prior to discharge to prevent situations in which a patient is forced to omit a dose for financial or other reasons." (32)			
C.	Does teaching about new anticoagulation therapy or changes in existing anticoagulation therapy begin prior to the day of discharge? Do medical record reviews reveal that this takes place?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "At the onset of therapy and prior to discharge, provide education to patients who are on anticoagulants. Some of the oral			

Patient Education				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	anticoagulants have complex dosing and the potential for serious drug-drug interactions, so it is extremely important for a patient to understand how to take the medication.[a, b] Remind patients that the risks of anticoagulants include bleeding but that there are also risks of clotting from the underlying condition due to inadequate anticoagulation when doses are missed.[a] Tools exist, such as ISMP's patient counseling sheets, which can be shared with patients to help prevent errors with warfarin.[b]" (33)			

Managing Adverse Drug Events				
		Met – 1 Not Met – 0	**N/A**	**Comments**
A.	Are the AMS program outcomes defined and measured?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Define AMS program outcomes for future measurement. Consider measurement of target INR levels, INR levels associated with hemorrhagic complications and thromboembolism rates, deaths, minor and major bleeding episodes, use of ED visits and hospital admissions associated with anticoagulation problems, hospital length of stay, patient satisfaction, and reimbursement.[a,b]" (34)			

Managing Adverse Drug Events				
		Met – 1 **Not Met – 0**	**N/A**	**Comments**
B.	Monitoring adverse drug events (ADEs): How are anticoagulation ADEs classified? For example are reports of INRs greater than three and episodes of vitamin K administration considered as possible indicators of warfarin associated ADEs? How quickly are steps taken to address these?			
Rationale	**From the Pennsylvania Patient Safety Authority:** "Defined adverse drug event triggers such as INR greater than 6, sudden decline in renal function, bleeding, or hypercoagulability may help monitor patients and identify the potential or actual onset of new adverse drug events.[a] Administration of reversal agents such as vitamin K1 and protamine are additional triggers that can be used to identify adverse events during chart review processes.[b]" (35)			
C.	Who is involved when errors occur? Who is involved in the investigation and analysis?			
Rationale	**From The Joint Commission:** NPSG.03.05.01, Element of Performance 8: "Evaluate anticoagulation safety practices, take action to improve practices and measure the effectiveness of those actions in a time frame determined by the organization." (36)			

Managing Adverse Drug Events				
		Met – 1 Not Met – 0	**N/A**	**Comments**
	From the Pennsylvania Patient Safety Authority: "When errors happen, investigating and sharing them with other clinicians raises awareness on issues surrounding oral anticoagulants. Prior potential, near-miss and harmful event reports may help facilities identity possible errors and areas for improvement." (37) **From National Action Plan for Adverse Drug Event Prevention:** "Anticoagulants have been consistently identified as the most common causes of ADEs across health care settings." (38)			

References:

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8. Ibid.
9. The Joint Commission, "Preventing Errors Relating to Commonly Used Anticoagulants," Sentinel Event Alert, Issue 41, September 24, 2008, citing [a] L. J. Oyen et al., "Effectiveness of a Computerized System for Intravenous Heparin Administration: Using Information Technology to Improve Patient Care and Patient Safety," American Heart Hospital Journal, Vol. 3, No. 2, 2005, pp. 75-81; and [b] L. Oertal et al., "Unfractionated Heparin: A Nursing Dilemma," Pharmacotherapy, Vol. 24, 2004, pp. 156S-160S.
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14. Ibid, also citing [b] W. L. Galanter, R. J. Didomenico and A. Polikaitis, "A Trial of Automated Decision Support Alerts for Contraindicated Medications Using Computerized Physician Order Entry," The Journal of the American Medical Informatics Association, Vol. 12, No. 3, May-June 2005, pp. 269-74; and [c] A. D. Michaels, S. A. Spinler, B. Leeper B, et al., "Medication Errors in Acute Cardiovascular and Stroke Patients: A Scientific Statement from the American Heart Association," Circulation, Vol. 121, No. 14, April 13, 2010, pp. 1664-1682.
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