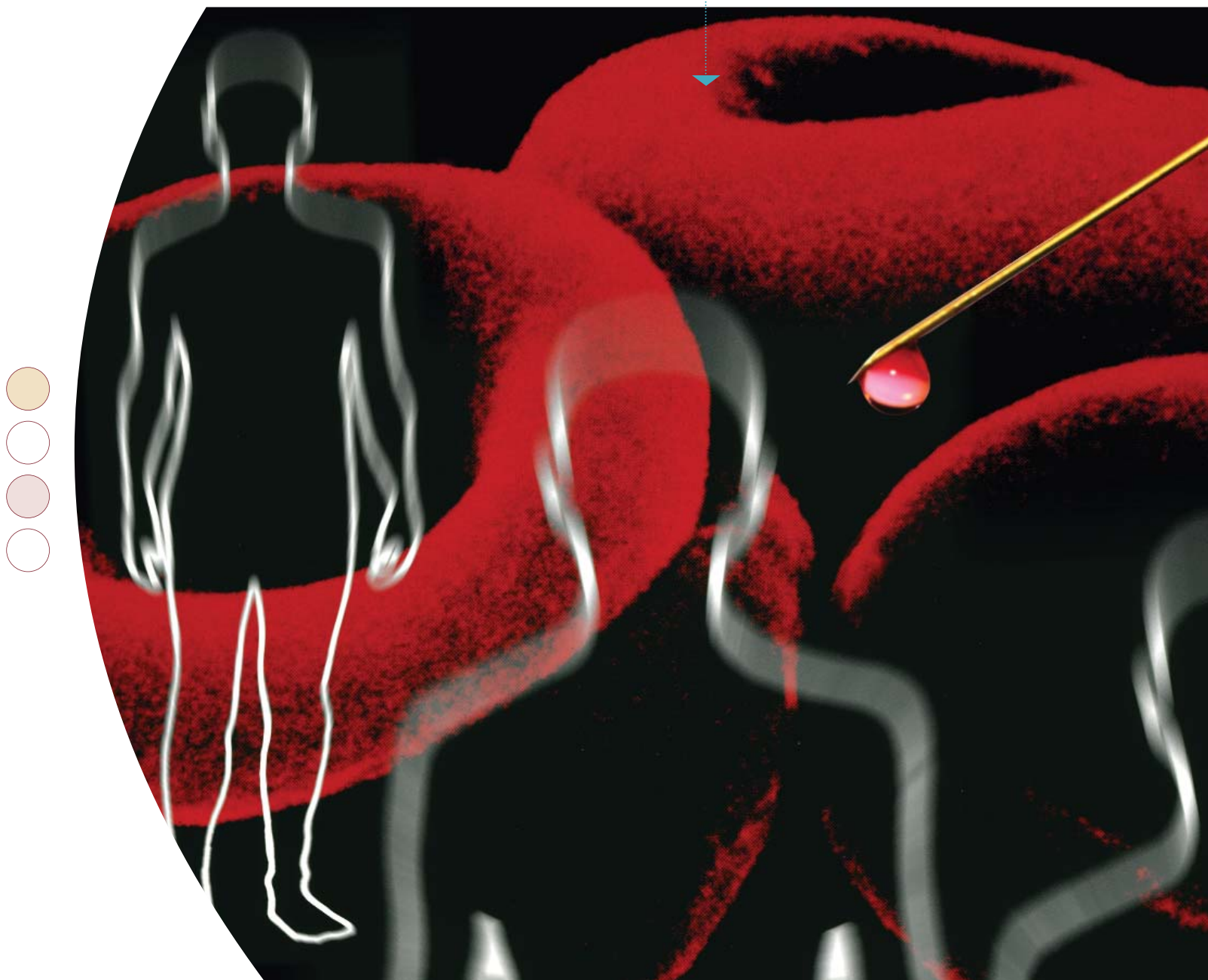


2005

# ISMP Medication Safety Self Assessment<sup>®</sup> for *Antithrombotic Therapy* in Hospitals



Institute for Safe Medication Practices (ISMP)

# Advisory Panel

ISMP thanks the following members of our volunteer Advisory Panel, who helped review the content of the ISMP *Medication Safety Self Assessment*® for *Antithrombotic Therapy in Hospitals*.

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# An Invitation to Participate

## Dear Healthcare Provider:

The Institute for Safe Medication Practices (ISMP) is pleased to provide the nation's hospitals with the ISMP Medication Safety Self Assessment® for *Antithrombotic Therapy* in Hospitals.

This tool will help you assess the medication safety practices in your institution surrounding the use of antithrombotic therapy, identify opportunities for improvement, and compare your experience with the aggregate experience of demographically similar hospitals.

This tool contains items that address the use of antithrombotic drugs in the clinical setting, many of which are on the ISMP list of high-alert medications. Many of the items included in the tool represent system improvements and safeguards that ISMP has recommended in response to analysis of medication errors reported to the United States Pharmacopeia – ISMP Medication Errors Reporting Program, problems identified during on-site consultations with hospitals, and guidelines in the medical literature involving the use of antithrombotic agents.

Antithrombotic therapy involves practitioners from multiple disciplines and departments. Therefore, we strongly urge you to use the following process to complete this tool:

- **Establish a multidisciplinary team.**
- **Assess your organization's use of antithrombotic agents** through a consensus vote from all team members after thoroughly investigating the level of implementation for each self-assessment item.
- **Confidentially submit your data to ISMP** to receive numerical, weighted scores for each of the self-assessment items. ISMP has extensive experience working with confidential, sensitive data. We understand that confidentiality is a priority and have taken every available precaution to protect the data you submit to ISMP.
- **Compare your experience** with the aggregate experience of demographically similar US hospitals.
- **Document your progress** toward improvement by re-assessing your use of antithrombotic agents with this tool on a regular basis.

Consistent with the use of data submitted from the 2000 and 2004 ISMP Medication Safety Self Assessment® for Hospitals, ISMP will use the aggregate findings of this self-assessment to plan curricula and other means of support to assist you in enhancing medication safety.

We welcome the opportunity to work with you as you assess the safe use of antithrombotic agents in your organization.

Sincerely,



**Michael R. Cohen, RPh, MS, ScD**  
President  
Institute for Safe Medication Practices

## About the Institute for Safe Medication Practices (ISMP)

The *Institute for Safe Medication Practices* (ISMP), based in suburban Philadelphia, is the nation's only 501c(3) nonprofit organization devoted entirely to medication error prevention and safe medication use. The organization is known and respected worldwide as the premier resource for impartial, timely, and accurate medication safety information.

The Institute's medication error prevention efforts began in 1975 with a groundbreaking and continuing column in *Hospital Pharmacy* that increases understanding and educates healthcare professionals and others about medication error prevention. ISMP was formally incorporated as a nonprofit organization in 1994.

Today, a continuously expanding core of knowledge in medication safety fuels the Institute's highly effective initiatives to improve the medication use process. These initiatives, which are built upon a non-punitive approach and system-based solutions, fall into five key areas: knowledge, analysis, education, cooperation, and communication.

More than 25 years ago, ISMP started a cornerstone of its medication error prevention efforts – a voluntary practitioner error-reporting program to learn about errors happening across the nation, understand their causes, and share “lessons learned” with the healthcare community. Each year, the national Medication Errors Reporting Program (MERP), operated by the United States Pharmacopeia (USP) in conjunction with ISMP, receives hundreds of error reports from healthcare professionals. In addition, ISMP's wholly owned corporate subsidiary, Med-E.R.R.S (Medical Error Recognition and Revision Strategies), works directly and confidentially with the pharmaceutical industry to prevent errors that stem from confusing or misleading drug names, labels, and packages.

The Institute's other initiatives include publishing four medication safety newsletters for healthcare professionals and consumers that reach more than 3.5 million readers; presenting frequent educational programs, including teleconferences, on current medication use issues; offering posters, videos, patient brochures, books and other resources; and providing confidential consultation services to healthcare systems to proactively evaluate medication systems or analyze medication-related sentinel events. ISMP collaborates on a continuing basis with a wide variety of healthcare practitioners, legislative and regulatory bodies, healthcare institutions, healthcare professional organizations, regulatory and accrediting agencies, employer and insurer groups, and the pharmaceutical industry.

As an independent watchdog organization, ISMP receives no advertising revenue and depends entirely on charitable donations, educational grants, newsletter subscriptions, and volunteer efforts to pursue its lifesaving work. For more information, visit ISMP online at [www.ismp.org](http://www.ismp.org).

## About the Self-Assessment

### The ISMP Medication Safety Self Assessment® for *Antithrombotic Therapy* in Hospitals is designed to:

*Heighten awareness of items related to the safe use of antithrombotic agents and create a baseline of hospital efforts to enhance safety with these agents and evaluate these efforts over time.*

The self-assessment is divided into eight key elements that significantly influence safe use of antithrombotic agents. Each key element is defined by one or more core characteristics of a safe medication system. Self-assessment items are provided to help you evaluate your success with achieving each core characteristic.

The ISMP Medication Safety Self Assessment® for *Antithrombotic Therapy* in Hospitals and its components are copyrighted by ISMP and may not be used in whole or in part for any other purpose or by any other entity except for self-assessment of antithrombotic therapy by US hospitals. The aggregate results of this assessment will be used for research and education purposes only.

ISMP is not a standards-setting organization. As such, the self-assessment items in this document are not purported to represent a minimum standard of practice and should not be considered as such. In fact, some of the self-assessment criteria represent innovative practices and system enhancements that are not widely implemented in most hospitals today. However, their value in reducing errors is grounded in scientific research and expert analysis of medication errors and their causes.

### Glossary (for purposes of this self-assessment)

**ANTITHROMBOTIC AGENTS** include warfarin, heparin(s), Factor Xa inhibitors, direct thrombin inhibitors, thrombolytics, and glycoprotein IIb-IIIa inhibitors.

#### EXAMPLES

##### **DIRECT THROMBIN INHIBITORS**

- argatroban
- bivalirudin (Angiomax®)
- lepirudin (Refludan®)

##### **FACTOR Xa INHIBITOR**

- fondaparinux (Arixtra®)

##### **GLYCOPROTEIN IIb-IIIa INHIBITORS**

- abciximab (Reopro®)
- eptifibatide (Integrilin®)
- tirofiban (Aggrastat®)

##### **HEPARIN(S)**

- unfractionated heparin
- low molecular weight heparins
  - dalteparin (Fragmin®)
  - enoxaparin (Lovenox®)
  - tinzaparin (Innohep®)

##### **THROMBOLYTICS**

- alteplase (Activase®)
- reteplase (Retavase®)
- streptokinase (Streptase®)
- tenecteplase (TNKase®)

### Abbreviations

**aPTT** – activated partial thromboplastin time

**HIT** – heparin-induced thrombocytopenia

**INR** – international normalized ratio

**LMW heparin** – low molecular weight heparin

## Key Definitions

### Key Definitions (for purposes of the self-assessment tool)

**CAREGIVER**

Family member, friend, or other person assisting or monitoring the patient's adherence to instructions in the outpatient setting.

**ERROR-PRONE ABBREVIATIONS**

Certain medical abbreviations, symbols, and dose designations that are considered "dangerous" and have often contributed to serious medication errors. A complete list can be found at [www.ismp.org](http://www.ismp.org).

**HIGH-ALERT MEDICATIONS (OR DRUGS)**

Medications that have a high risk of causing serious injury or death to a patient if they are misused. Errors with these products are not necessarily more common, but their results can be more devastating. Examples of high-alert medications include warfarin and IV antithrombotics, insulin, chemotherapy, concentrated electrolytes, IV digoxin, opiate narcotics, neuromuscular blocking agents, and adrenergic agonists. A complete list can be found at [www.ismp.org](http://www.ismp.org).

**IMPLEMENTED**

Accomplished or achieved in practice, not just policy; to carry into effect.

**INDEPENDENT DOUBLE CHECK**

A procedure in which two individuals, preferably two licensed practitioners, separately check each component of the work process. An example would be one person calculating a medication dose for a specific patient and a second individual independently performing the same calculation (not just verifying the calculation) and matching the results.

**INTERFACED**

A direct link between two information systems in which information from one system is immediately available to the user of the second system, and integrated in a way that supports clinical decision making (e.g., interfacing the laboratory and pharmacy computer systems would immediately provide corresponding laboratory data to the pharmacist while he/she is entering a specific medication order). This may or many not include a bi-directional interface of the systems to allow communication in both directions.

**MACHINE-READABLE CODING**

Any encoded identifying mark (e.g., bar code) representing data that can be read with a computerized reading device, such as a scanner or imager.

**PRACTITIONER**

A licensed healthcare professional such as a physician, physician assistant, nurse anesthetist, nurse practitioner, nurse, or pharmacist.

**TURNAROUND TIME**

An interval that represents the period of time it takes for a medication order to be processed, typically from the time an order is written or electronically prescribed until the drug is available to a practitioner for administration to a patient.

**SMART INFUSION PUMP**

An infusion pump with computer software that is capable of alerting the user to unsafe dose limits and programming errors if standard concentrations and dose limits have been programmed into the pump's library.

Key terms with definitions are designated throughout the text with CAPITAL LETTERS.

# Instructions for Conducting the Self Assessment

**1 Establish a multidisciplinary team** consisting of or similar to the following:

- representative from administration
- chief medical officer
- representative from nursing management
- representative from pharmacy management
- representative from clinical informatics
- risk management and/or quality improvement professionals
- at least two nurses from different specialty areas who administer antithrombotic drugs
- at least two pharmacists (clinical and distribution) who are involved in antithrombotic therapy
- representative from the clinical laboratory
- at least one active staff physician, preferably a hematologist, internist, or hospitalist
- representative from antithrombotic team and/or clinic (if team or clinic exists).

Your team should be provided with sufficient time to complete the self-assessment and be charged with responsibility to evaluate, accurately and honestly, the current status of antithrombotic therapy in your facility. Because antithrombotic therapy is a complex, interdisciplinary process, the value and accuracy of the self-assessment is significantly reduced if it is completed by a single discipline. ISMP estimates that it will take two team meetings to complete the self-assessment.

**2 Read and review the self-assessment** in its entirety before beginning the assessment process. If possible, make copies of the self-assessment and send them to team members for review before the first meeting.

**3 Complete the “Demographic Information” section.** The team leader should verify the responses in this section with hospital administration.

**4 Convene the team.**

**5 Discuss each core characteristic and evaluate the hospital’s success with implementing the self-assessment items.** As necessary, investigate and verify the level of implementation with other healthcare practitioners outside your team. When a consensus on the level of implementation for each self-assessment item has been reached, place a checkmark (✓) in the appropriate column using the following scoring key:

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## Scoring Key

- A** *There has been no activity to implement this item.*
  - B** *This item has been formally discussed and considered, but it has not been implemented.*
  - C** *This item has been partially implemented in the organization for some or all areas, patients, drugs, and/or staff.*
  - D** *This item is fully implemented in the organization for some areas, patients, drugs, and/or staff.*
  - E** *This item is fully implemented throughout the organization for all patients, drugs, and/or staff.*
-

## Instructions for Conducting the Self Assessment *continued*

### Important Scoring Guidelines

*For all self-assessment items:* Unless otherwise stated, self-assessment items refer to antithrombotics and related medications prescribed, dispensed, and administered to all inpatients and outpatients typically seen in most hospitals, such as patients admitted to the emergency department and ambulatory surgery/procedure units.

*For self-assessment items with multiple components:* Full implementation (score D or E) is evidenced only if all components are present. If only one or some of the components have been partially or fully implemented throughout the organization, self-assessment scores should not exceed level “C.”

*For self-assessment items with two distinct elements, each separated with the word, “OR” and labeled (a) and (b):* Answer either part (a) **OR** part (b), but not both.

*For self-assessment items that offer an option for “Not Applicable”:* Select “Not Applicable” only if the item does not correspond to any services you provide in your hospital, either to inpatients or outpatients. Scores will not be negatively affected for selecting “Not Applicable” when appropriate.

**6 Repeat the process for all self-assessment items.**

**7 If you have questions, please visit the Frequently Asked Questions (FAQ) section on the ISMP website ([www.ismp.org](http://www.ismp.org)).** Self-assessment items that have been initially associated with a Frequently Asked Question are highlighted near the item number with the initials FAQ. Other Frequently Asked Questions will be posted to the website as encountered. Contact ISMP at [selfassess@ismp.org](mailto:selfassess@ismp.org) or call (215) 947-7797 during usual business hours (Eastern Daylight Time) if you need additional assistance.

**8 Transfer the password found on the back cover of the booklet mailed to you to the space provided after the last self-assessment item (page 27) to facilitate data submission to ISMP.**

**9 Go to [www.ismp.org](http://www.ismp.org) and click on the link that identifies the self-assessment and begin to enter your data online.** See page 7 for further information on submitting online.

**10 Submit data from the completed self-assessment to ISMP by March 1, 2006.** See submission instructions on page 7.

# Instructions for Submitting Data to ISMP

## Data Submission and Information Security

We encourage each individual hospital to submit the results of their self-assessment using our web-based survey form, which is available on the ISMP home page ([www.ismp.org](http://www.ismp.org)) by clicking on the link that identifies this project. The site can be accessed from any computer with Internet capability. The web-based survey form is a large file and may take a few minutes to access. Detailed instructions for submitting data to ISMP are available on our website and can be printed for reference before or during the data entry process.

After data is entered into the special survey form, a prompt will appear for password entry. Each mailed self-assessment booklet contains a unique password listed on the inside back cover. The password is necessary to allow data submission only once for each hospital. Passwords cannot be traced back to a hospital. After the password has been entered and accepted, data can be submitted to ISMP. The survey tool will then immediately download the information into a database maintained solely by ISMP.

After data submission, the program will prompt you to print the completed survey form on your printer. The printed survey form will include numerical, weighted scores for each of the self-assessment items, subtotals for each of the core characteristics and key elements, and a total score for the self-assessment. **These weighted scores and your password should be maintained in a safe location and can be used later to compare your hospital's findings with other demographically similar hospitals.** If you misplace your weighted survey scores after submitting data to ISMP, you can reenter your password to reprint a report. However, you will not be able to make any changes to the data you originally submitted.

*Please note, weighted scores are not visible on the web-based survey form during data entry. Hospitals can obtain their weighted scores only after they submit the self-assessment data to ISMP. Without weighted scores, hospitals will be unable to compare their experiences to other hospitals that have chosen to participate in this project.*

If hospitals do not have Internet access, the completed self-assessment can be mailed to the Institute for Safe Medication Practices, 1800 Byberry Road, Suite 810, Huntingdon Valley, PA 19006. ISMP staff will enter the information into the database. If the name and address of a designated person are included with the self-assessment, ISMP will print the survey form with the weighted scores and mail it to the hospital.

## Explanation of Weighted Scores

To determine a weight for each self-assessment item, ISMP staff used a standard process to independently evaluate each item to determine its impact on patient safety and its ability to sustain improvement. Therefore, the self-assessment items with the highest weight are those that:

- Target the system, not the workforce
- Do not rely heavily on human memory and vigilance
- Demonstrate through scientific evidence that they are effective in reducing serious medication errors
- Prevent the most potentially harmful errors with antithrombotic medications
- Safeguard at-risk patient populations who take antithrombotic medications
- Make it harder for healthcare practitioners to do their job wrong, and easy for them to do it right.

Some of the self-assessment items are weighted in a way that result in no numerical score (zero value) unless there is full implementation of the item throughout the organization.

## Access to Comparative Reports

ISMP will publish on our website comparative reports of the level of safety with antithrombotic therapy in US hospitals based on these data. **Once the data collection period has ended in September 2005, hospitals that submitted data to ISMP will be able to immediately access initial aggregate reports using the same password they used during the data submission process. Later, a workbook will be posted with more detailed aggregate comparative reports for comparison with like hospitals.**

## Demographics

All questions in the demographics section must be completed unless otherwise noted as optional. We would hope that all questions are completed in order for us to better analyze the aggregate data and provide more concise demographic comparisons for hospitals.

**1 Please check the one category that best describes the number of beds currently set up and staffed for use in your hospital.**

- Fewer than 100 beds
- 100 to 299 beds
- 300 to 499 beds
- 500 beds and over

**2 Please check the one category that best describes the type of organization that is responsible for establishing policy for the overall operation of your hospital.**

- State and local government
- Non-government, not-for-profit
- Investor-owned, for-profit
- Military

.....> *To which branch of the service does your hospital belong?*

- Army
- Navy
- Air Force
- Veterans Affairs
- US Public Health Service
- Other: \_\_\_\_\_

**3 Please check the one category that best describes the type of service that your hospital provides to the majority of its admissions.**

- General medical and surgical
- Psychiatric
- Rehabilitation
- Specialty: Pediatric
- Specialty: Oncology
- Other: \_\_\_\_\_

**4 Does your hospital provide venous duplex ultrasound imaging services 24 hours per day and 7 days per week?**

- Yes
- No

**5 Does your hospital have a physician residency-training program that has been approved by the Accreditation Council for Graduate Medical Education?**

- Yes

.....> *Do you offer a medical residency in the following specialties? (check all that apply)*

- Emergency Medicine
- Hematology
- Hematology/Oncology

- No

**6 Does your hospital have a pharmacy residency-training program that has been accredited by the American Society of Health-System Pharmacists?**

- Yes
- No

Demographics *continued***7 Does your organization have an inpatient antithrombosis team to manage patients with complicated thrombotic episodes?** Yes

.....&gt; Does the team include the following types of healthcare providers? (check all that apply)

- Physician
- Pharmacist
- Nurse
- Dietician
- Laboratory Technician
- Patient Educator

 No**8 Does your hospital have an outpatient anticoagulation service/clinic affiliation?** Yes

.....&gt; Is the clinic/service staffed with the following healthcare providers? (check all that apply)

- Physician
- Pharmacist
- Nurse
- Dietician
- Laboratory Technician
- Patient Educator

 No**9 Through which alliance group/purchasing organization does your organization purchase medications?**

- None
- Amerinet
- Broadlane
- Consorta
- Department of Defense
- HCA
- HSCA
- Premier
- Purchase Connection
- Veterans Affairs
- VHA/Novation
- UHC/Novation
- Other: \_\_\_\_\_

**10 Please check the one category that best describes the location of your hospital.** Urban Rural

.....&gt; Is your hospital a critical access hospital? (Optional)

- Yes
- No

**11 Please tell us in which state you are located.** \_\_\_\_\_

State (or US military foreign)

**12 Have you completed the 2004 ISMP Medication Safety Self Assessment® for Hospitals? (Optional)** Yes No

# I Patient Information

- A** No activity to implement
- B** Considered, but not implemented
- C** Partially implemented
- D** Fully implemented for some
- E** Fully implemented for all

## Self-Assessment Items

- A** **B** **C** **D** **E**

Core Characteristic	1	<i>Essential patient information is obtained and readily available in a useful form when prescribing, dispensing, and administering antithrombotic therapy.</i>				
1	A baseline hemoglobin, hematocrit, serum creatinine, and platelet count are obtained prior to initiating antithrombotic therapy (inpatient or outpatient) with unfractionated heparin or LMW heparin.					
2	During antithrombotic therapy (inpatient and outpatient) of more than 3 to 5 days with unfractionated heparin or LMW heparin, a platelet count is repeated every 3 days during the first 2 weeks of therapy.					
3	After initiating a heparin infusion, an aPTT test is obtained <i>no sooner</i> than 6 to 8 hours after the start of the infusion (unless bleeding occurs).					
4	The INR is the only laboratory test used to monitor and adjust warfarin therapy.					
5	Blood specimens for INRs are drawn at the same time each morning so the results are available to prescribers before warfarin doses are prescribed.					
6	The hospital provides stat laboratory test results 24 hours per day and 7 days per week to ensure safe and timely monitoring of antithrombotic therapy.					
<b>FAQ</b> 7	The organization has defined the acceptable length of time between the ordering of critical hematological tests (e.g., INR, aPPT) and reporting of the test results, and between the availability of the results and receipt by a responsible licensed healthcare provider.					
<b>FAQ</b> 8	All hematological lab values defined as critical by the laboratory are reported directly to a responsible licensed healthcare provider within the timeframe established by the organization.					
9	Prescribers, pharmacists, and nurses are informed when laboratory reagents that are used to measure the aPTT or other hematologic tests are changed; <u>and</u> dosing protocols and nomograms are modified as needed (e.g., weight-based heparin protocols).					
10	<i>Prescribers and nurses can easily and electronically access <u>inpatient</u> laboratory results (e.g., hemoglobin, hematocrit, liver function tests, serum creatinine, INR, aPTT, platelet count, anti-factor Xa levels) to guide antithrombotic therapy.</i>					

Patient Information *continued*

I

- (A) No activity to implement  
 (B) Considered, but not implemented  
 (C) Partially implemented  
 (D) Fully implemented for some  
 (E) Fully implemented for all

## Self-Assessment Items

		(A)	(B)	(C)	(D)	(E)
11	Pharmacists can easily and electronically access <u>inpatient</u> laboratory results (e.g., hematocrit, hemoglobin, liver function tests, serum creatinine, INR, aPTT, platelet count, anti-factor Xa levels) to guide antithrombotic therapy.					
12	Prescribers and nurses can easily and electronically access <u>outpatient</u> laboratory results (e.g., hematocrit, hemoglobin, liver function tests, serum creatinine, INR, aPTT, platelet count, anti-factor Xa levels) to guide antithrombotic therapy.					
13	Pharmacists can easily and electronically access <u>outpatient</u> laboratory results (e.g., hematocrit, hemoglobin, liver function tests, serum creatinine, INR, aPTT, platelet count, anti-factor Xa levels) to guide antithrombotic therapy.					
14	The computer system used for medication order entry is <u>directly</u> INTER-FACED with the laboratory system to <u>automatically</u> alert PRACTITIONERS to abnormal values, indicating a potential need to modify antithrombotic therapy.					
<b>FAQ</b> 15	All weight-based guidelines or protocols identify whether the patient's ideal body weight, actual weight, or a medical staff-approved dosing-corrected weight is to be used in the calculations.					
16	Antithrombotic orders cannot be entered into the pharmacy computer system until the patient's weight (preferably in kilograms) and height have been entered. (Weight and height are required fields.)					
17	Prior to initiating antithrombotic therapy, healthcare PRACTITIONERS screen patients for co-existing diseases or conditions (e.g., hepatic impairment, hypothyroidism, hyperthyroidism, congestive heart failure, renal failure, hypoalbuminemia, high vitamin K intake) that could affect the dose requirements for antithrombotic therapy; <u>and</u> , if encountered, these conditions are documented on the medical record and clearly visible to healthcare providers who prescribe, dispense, or administer antithrombotic therapy.					
18	Prior to initiating antithrombotic therapy, healthcare PRACTITIONERS question patients about recent trauma, surgery, or bleeding problems experienced while receiving any previous antithrombotic therapy; <u>and</u> , if encountered, these conditions are documented on the medical record and clearly visible to healthcare providers who prescribe, dispense, or administer antithrombotic therapy.					

# I Patient Information *continued*

- A** No activity to implement
- B** Considered, but not implemented
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## Self-Assessment Items

		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
19	Prior to ordering any heparin product (including LMW heparin), prescribers specifically ask patients if they have a known history of HIT and/or an allergy to heparin; <u>and</u> positive responses are documented on the medical record and clearly visible to healthcare practitioners who prescribe, dispense, or administer heparin.					
20	Prior to initiating the use of heparin for catheter flushes, arterial line infusions, or heparin-coated catheters or instruments, patients are specifically asked if they have a known history of HIT and/or an allergy to heparin; <u>and</u> positive responses are documented on the medical record and clearly visible to healthcare providers who prescribe, dispense, or administer heparin.					
21	All antithrombotic order sets (including those used electronically) and drug administration flow sheets contain prompts or fields to document and display the patient's diagnosis, allergies, height, actual body weight, and most recent pertinent laboratory data; <u>and</u> these fields are consistently populated with the required information.					
22	MACHINE-READABLE CODING (e.g., bar coding) that utilizes at least two patient identifiers (e.g., name and birth date, name and medical record number, name and account number) is used to verify patient identity before administration of oral and intravenous antithrombotic agents.					
23	When warfarin is prescribed, nurses, pharmacists, and prescribers monitor all INR values to ensure that the range is maintained between 2 and 3, or at a level consistent with recommendations or protocols for the specific disease or condition for which antithrombotic therapy is prescribed.					
24	When heparin is prescribed for therapeutic anticoagulation, nurses, pharmacists, and prescribers monitor all aPTT laboratory values to ensure that the range is maintained between 1.5 to 2.5 times the control value, or as dictated by a correlation between the aPTT and heparin levels measured by anti-factor Xa assay or protamine titration method.					

Patient Information *continued*

I

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 (E) Fully implemented for all

## Self-Assessment Items

(A) (B) (C) (D) (E)

Core Characteristic	2	<i>Essential patient information is used to monitor and manage the effects of antithrombotic therapy, and to adjust the treatment plan when indicated by evidence-based practices.</i>				
25	The indication and therapeutic goal for antithrombotic therapy is documented in the patient's medical record <u>and</u> communicated to pharmacy for monitoring and managing patient therapy.					
26a	Pharmacists can automatically modify antithrombotic therapy doses when laboratory values are below or above the target range, as specified by medical staff-approved protocols.					
OR	<b>OR</b>					
26b	Pharmacists directly contact the prescriber within a hospital-defined timeframe to discuss lab values below or above the target range and potential modifications of antithrombotic therapy.					
27	A pharmacist or prescriber routinely adjusts the doses of LMW heparin and Factor Xa inhibitors for patients with renal impairment, extremes of body weight, pregnancy, and in other special populations such as infants or neonates.					
28	Prescribers routinely order initial doses of warfarin between 2.5 mg and 5 mg for patients 65 and older, or for patients less than 65 who have co-morbid conditions (e.g., thyroid disease) that would affect their response to warfarin.					
29	If a patient's platelet count decreases to less than 100,000/mm <sup>3</sup> or less than 50% of the baseline, there is a mechanism in place to ensure that the patient is evaluated for HIT; <u>and</u> that all sources of heparin (including LMW heparin, heparin used for arterial line infusions or catheter flushes, and heparin-coated catheters or instruments) are discontinued.					
30	When warfarin therapy is initiated for a patient with active thrombosis, heparin or LMW heparin therapy is continued until warfarin has been administered for a minimum of 4 days <u>and</u> the INR reaches a therapeutic level for 2 consecutive days.					
<b>FAQ</b> 31	Patients on warfarin therapy who are being discharged with a subtherapeutic INR are consistently evaluated regarding the need for LMW heparin until a therapeutic INR is reached; <u>and</u> , when appropriate, patients are maintained or "bridged" with LMW heparin until therapeutic INR levels are reached.					
32	If surgery is significantly delayed or postponed, a reliable process is in place to consistently remind the prescriber to evaluate the need to resume antithrombotic therapy for all patients who had previously been receiving such therapy.					

## II Drug Information

- (A) No activity to implement  
 (B) Considered, but not implemented  
 (C) Partially implemented  
 (D) Fully implemented for some  
 (E) Fully implemented for all

### Self-Assessment Items

(A) (B) (C) (D) (E)

Core Characteristic	3 ▶ Essential drug information is readily available in a useful form and considered when ordering, dispensing, and administering antithrombotic therapy.					
33	A complete history of medication use (including prescription and over-the-counter drugs, vitamins, herbal products, and illicit drugs) and other pertinent health issues, such as smoking and ethanol use, is obtained and documented on every inpatient and outpatient upon admission or initial encounter; <u>and</u> the information is verified upon each subsequent encounter.					
34	Warfarin and parenteral antithrombotics are included in the organization's defined list of HIGH-ALERT MEDICATIONS, which has been communicated to all healthcare PRACTITIONERS.					
35	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; <u>and</u> used when antithrombotics are prescribed, dispensed, and administered.					
36	All protocols, pathways, guidelines, nomograms, order sets, flow sheets, and/or checklists for antithrombotic therapy undergo a formal approval process <u>before</u> use, which includes at a minimum, review by a pharmacist and those who will be using the tool.					
37	All protocols, pathways, guidelines, nomograms, order sets, flow sheets, and/or checklists for antithrombotic therapy are reviewed at least annually and revised when significant, new information becomes available.					
38	There is an effective system in place to promptly retrieve outdated protocols, pathways, guidelines, nomograms, order sets, flow sheets, and/or checklists throughout the facility and in physician offices; <u>and</u> to replace outdated protocols with updated versions.					
39	Disease-specific protocols (e.g., atrial fibrillation, deep vein thrombosis, pulmonary embolism) are readily available <u>and</u> used to guide appropriate and safe warfarin therapy; <u>and</u> the different protocols are clearly labeled to ensure proper identification and use.					
40	Disease-specific protocols (e.g., stroke, cardiac disease, deep vein thrombosis) are readily available <u>and</u> used to guide appropriate and safe use of heparin and thrombolytics; <u>and</u> the different protocols are clearly labeled to ensure proper identification and use.					

Drug Information *continued*

## II

- (A) No activity to implement  
 (B) Considered, but not implemented  
 (C) Partially implemented  
 (D) Fully implemented for some  
 (E) Fully implemented for all

## Self-Assessment Items

		(A)	(B)	(C)	(D)	(E)
41	Protocols direct prescribers to employ a continuous infusion (not intermittent IV administration) when intravenous heparin is prescribed to achieve a therapeutic aPTT.					
42	Disease-specific protocols for antithrombotic therapy are readily available for reference in the pharmacy (and after-hours drug storage areas if the pharmacy is closed) <u>and</u> in all patient care areas where these medications are administered.					
43	When intravenous heparin or direct thrombin inhibitors are prescribed, a standardized weight-based protocol is readily available <u>and</u> used to guide dosing and dose adjustments based on aPTT results.					
44	Tables that list doses and corresponding infusion rates for standard concentrations of antithrombotic infusions (e.g., heparin, direct thrombin inhibitors) are readily available in patient care units where these agents are administered, to reduce reliance on mathematical calculations.					
45	A protocol or guideline exists for safely managing the care and removal of epidural catheters placed during regional anesthesia when LMW heparin has been administered for surgical prophylaxis.					
46	A protocol or guideline exists for monitoring and/or discontinuing antithrombotic therapy prior to invasive procedures.					
47	Warnings appear on protocols, pathways, order sets, pharmacy order-entry screens, and automated dispensing cabinet monitors to review all medications the patient has received in the past 24 hours (including in the emergency department) to ensure that adequate time has elapsed between doses of the same or different antithrombotic (e.g., LMW heparin given in the emergency department, and heparin or fondaparinux prescribed upon admission to the hospital).					
48a	<b>In hospitals <u>WITHOUT</u> computerized prescriber order entry (CPOE) systems:</b> The pharmacy computer system alerts healthcare PRACTITIONERS to duplicate class orders for antithrombotics (for two or more drugs within the same class).					
OR	<b>OR</b>					
48b	<b>In hospitals <u>WITH</u> computerized prescriber order entry (CPOE) systems:</b> The pharmacy computer system <u>and</u> the CPOE system alert healthcare PRACTITIONERS to duplicate class orders for antithrombotics (for two or more drugs within the same class). <i>Scoring guideline: Score C if the pharmacy computer system provides this alert, but the CPOE system does not. Note: The weighted score for C is equal to the weighted score for E in 48a.</i>					

## II Drug Information *continued*

- (A) No activity to implement  
 (B) Considered, but not implemented  
 (C) Partially implemented  
 (D) Fully implemented for some  
 (E) Fully implemented for all

### Self-Assessment Items

		(A)	(B)	(C)	(D)	(E)
49a	<b>In hospitals <u>WITHOUT</u> computerized prescriber order entry (CPOE) systems:</b> The pharmacy computer system alerts healthcare PRACTITIONERS to drug interactions that can affect the dose of antithrombotic therapy.					
OR	OR					
49b	<b>In hospitals <u>WITH</u> computerized prescriber order entry (CPOE) systems:</b> The pharmacy computer system <u>and</u> the computerized prescriber order entry system alert healthcare PRACTITIONERS to drug interactions that can affect the dose of antithrombotic therapy. <i>Scoring guideline: Score C if the pharmacy computer system provides this alert, but the CPOE system does not. Note: The weighted score for C is equal to the weighted score for E in 49a.</i>					
50a	<b>In hospitals <u>WITHOUT</u> computerized prescriber order entry (CPOE) systems:</b> The pharmacy computer system provides an alert and an electronic abstract or reference when drug-herbal interactions with prescribed antithrombotic therapy are detected.					
OR	OR					
50b	<b>In hospitals <u>WITH</u> computerized prescriber order entry (CPOE) systems:</b> The pharmacy computer system <u>and</u> the CPOE system provide an alert and an electronic abstract or reference when drug-herbal interactions with prescribed antithrombotic therapy are detected. <i>Scoring guideline: Score C if the pharmacy computer system provides this alert, but the CPOE system does not. Note: The weighted score for C is equal to the weighted score for E in 50a.</i>					
51a	<b>In hospitals <u>WITHOUT</u> computerized prescriber order entry (CPOE) systems:</b> The pharmacy computer system alerts healthcare practitioners if aspirin or non-steroidal anti-inflammatory agents are prescribed for PRN use in patients who are receiving antithrombotic therapy.					
OR	OR					
51b	<b>In hospitals <u>WITH</u> computerized prescriber order entry (CPOE) systems:</b> The pharmacy computer system <u>and</u> the CPOE system alert healthcare practitioners if aspirin or non-steroidal anti-inflammatory agents are prescribed for PRN use in patients who are receiving antithrombotic therapy. <i>Scoring guideline: Score C if the pharmacy computer system provides this alert, but the CPOE system does not. Note: The weighted score for C is equal to the weighted score for E in 51a.</i>					

Drug Information *continued*

## II

- (A) No activity to implement  
 (B) Considered, but not implemented  
 (C) Partially implemented  
 (D) Fully implemented for some  
 (E) Fully implemented for all

## Self-Assessment Items

		(A)	(B)	(C)	(D)	(E)
<b>FAQ 52a</b>	<b>In hospitals <u>WITHOUT</u> computerized prescriber order entry (CPOE) systems:</b> The pharmacy computer system performs dose range checks and warns PRACTITIONERS about antithrombotic overdoses and underdoses.					
	<b>OR</b>					
<b>52b</b>	<b>In hospitals <u>WITH</u> computerized prescriber order entry (CPOE) systems:</b> The pharmacy computer system <u>and</u> the CPOE system perform dose range checks and warn PRACTITIONERS about antithrombotic overdoses and underdoses. Scoring guideline: <i>Score C if the pharmacy computer system provides this alert, but the CPOE system does not. Note: The weighted score for C is equal to the weighted score for E in 52a.</i>					
<b>53</b>	The pharmacy computer system provides an alert and an electronic abstract or reference when a drug-food/nutritional product interaction with prescribed antithrombotic therapy is detected.					
<b>54a</b>	The pharmacy computer system provides an alert and an electronic abstract or reference for drug-nutritional interactions between <i>enteral</i> nutrition products and antithrombotic therapy.					
	<b>OR</b>					
<b>54b</b>	Pharmacists use a manual process to screen for interactions between enteral nutrition products and antithrombotic therapy.					
<b>55</b>	The pharmacist <u>directly</u> reports significant dose concerns, drug interactions, contraindications, and duplicate drug therapy to the prescriber, within a hospital-defined timeframe, along with recommendations for alternative therapy or additional monitoring.					

## II Drug Information *continued*

- A** No activity to implement
- B** Considered, but not implemented
- C** Partially implemented
- D** Fully implemented for some
- E** Fully implemented for all

### Self-Assessment Items

**A** | **B** | **C** | **D** | **E**

Core Characteristic	4	<i>Essential drug information is readily available in a useful form to guide the management of adverse drug reactions that may occur when antithrombotic agents are prescribed.</i>				
56	A protocol exists to guide the reversal of supra-therapeutic INR values while taking into consideration the INR value, the absence or presence of clinically significant bleeding, and other factors that gauge necessity and urgency of reversal.					
57	Unless rapid reduction of a supra-therapeutic INR is required, protocols direct prescribers to order <u>oral</u> phytonadione (vitamin K <sub>1</sub> ).					
58	If intravenous vitamin K <sub>1</sub> is required (e.g., life-threatening warfarin overdose or rapid reduction of a supra-therapeutic INR accompanied by life-threatening bleeding), admixture procedures require diluting the medication in at least 50 mL of solution <u>and</u> administering the medication over 30 to 60 minutes.					
59	If HIT is <i>suspected</i> or <i>diagnosed</i> , there is a mechanism in place to ensure that all sources of heparin (including LMW heparin, heparin used for arterial lines or catheter flushes, heparin-coated catheters or instruments) are discontinued.					
60	If HIT is <i>suspected</i> or <i>diagnosed</i> , there is a mechanism in place to ensure that a prominent notation is placed on the patient's medical record, pharmacy patient profile, and medication administration record to alert staff to avoid the administration of, or exposure to, heparin in any form (including LMW heparin, heparin used for arterial line infusions or catheter flushes, heparin-coated catheters or instruments).					
61	Medical staff-approved protocols exist to treat patients with <i>known</i> or <i>suspected</i> HIT with direct thrombin inhibitors (e.g., argatroban, lepirudin, bivalirudin) if antithrombotic therapy is required.					
62	If HIT is <i>suspected</i> , patient evaluation criteria consistently include laboratory testing for the HIT antibody.					
63	If HIT is <i>diagnosed</i> , this adverse reaction and the date on which it occurred are documented in the patient's medical record <u>and</u> the pharmacy patient profile.					
64	In patients with HIT, protocols permit warfarin therapy <i>only</i> if the patient is also receiving a direct thrombin inhibitor <u>and</u> the platelet count is trending upward.					
65	When combination therapy with warfarin and a direct thrombin inhibitor is used to treat HIT, protocols permit the discontinuation of the direct thrombin inhibitor <i>only</i> after the patient has achieved a therapeutic INR.					
66	Initial orders for antithrombotic agents include a comment indicating if this therapy is a new treatment or a continuation of previous antithrombotic therapy.					

# Communication of Drug Orders and Other Drug Information

III

- A No activity to implement  
 B Considered, but not implemented  
 C Partially implemented  
 D Fully implemented for some  
 E Fully implemented for all

## Self-Assessment Items

 A  B  C  D  E

Core Characteristic		5 ▶ Methods of communicating orders for antithrombotics and other essential drug information are standardized and automated to minimize the risk for error.				
FAQ 67	Prescribers enter all antithrombotic orders into a computerized prescriber order entry (CPOE) system that is directly INTERFACED with the pharmacy computer system. <i>Scoring guideline: Do not choose D or E if prescribers enter orders into a CPOE system that is not directly INTERFACED with the pharmacy computer.</i>					
FAQ 68	Antithrombotic therapy is entered into the pharmacy computer and screened electronically against the patient's clinical profile for contraindications, interactions, and dose appropriateness <u>before</u> drug(s) are administered. ( <i>Exception: life-threatening situations such as those that require rapid administration of thrombolytics.</i> )					
69	Orders for antithrombotics that are governed by a "stop order" policy are <u>not</u> discontinued without the <i>specific</i> approval of the prescriber.					
70	A protocol permits and guides the rounding of doses for certain antithrombotic agents (e.g., enoxaparin 73 mg could be rounded to 70 mg, a weight-based heparin bolus dose of 2,485 units could be rounded to 2,500 units).					
71	A list of ERROR-PRONE ABBREVIATIONS (e.g., "u" for units) and dose expressions (e.g., using trailing zeros with whole number doses, not using leading zeros for doses less than one) that should never be used is established <u>and</u> IMPLEMENTED for all forms of communicating antithrombotic therapy in orders, during transcription, and on medication administration records, pharmacy-affixed labels, computer screens, and drug storage bins.					
72	Upon inpatient admission, all medications (including one-time doses) administered in the emergency department or other outpatient setting (e.g., cardiac catheterization lab, radiology, pre-hospital emergency care) are immediately communicated to the pharmacy <u>and</u> entered (or readily available) in the pharmacy computer system in a manner that facilitates an automated alert for duplicate therapy, contraindications, and drug interactions when antithrombotics prescribed upon admission are profiled.					
73	When an antithrombotic agent is administered in the emergency department or other outpatient settings (e.g., cardiac catheterization lab, radiology), the chart and medication administration record are boldly labeled to communicate this information to other PRACTITIONERS.					
74	A notation that identifies the specific interventions, treatments, or drugs that must be avoided (e.g., intramuscular injections, certain vascular access procedures) is recorded in the medical record, pharmacy profile, and the medication administration record for patients receiving antithrombotics.					
75	For inpatients, a process is in place to notify the food and nutrition department when patients are receiving warfarin therapy so that foods containing vitamin K can be provided in a similar pattern to home consumption.					

## IV Drug Storage, Stock, Standardization, and Distribution

- (A) No activity to implement  
 (B) Considered, but not implemented  
 (C) Partially implemented  
 (D) Fully implemented for some  
 (E) Fully implemented for all

### Self-Assessment Items

(A) (B) (C) (D) (E)

Core Characteristic		6 ▶ Antithrombotic concentrations, doses, and administration times are standardized whenever possible.				
76	Standard concentrations are used throughout the facility for IV antithrombotic infusions.					
77	The formulary limits the variety of heparin concentrations and vial sizes.					
<b>FAQ</b> 78	Prefilled syringes of heparin flushes are provided to all patient care units. <i>Scoring guideline: Score NOT APPLICABLE if heparin flushes are not used anywhere in the facility.</i>	<b>Not Applicable</b>				
79a	Vials of heparin are not stocked in any patient care unit.					
OR	<b>OR</b>					
79b	If heparin vials are stocked in patient care units, a limited variety of strengths and vial sizes are available, based on unit-specific patient needs.					
80	Only commercially prepared, premixed IV solutions of heparin are used in the facility.					
<b>FAQ</b> 81a	Commercially prepared, premixed IV solutions of GPIIb-IIIa platelet inhibitors are used when available, or the solutions are prepared in the pharmacy if not available commercially. <i>Scoring guideline: Score NOT APPLICABLE if you do not use GPIIb-IIIa inhibitors.</i>	<b>Not Applicable</b>				
OR	<b>OR</b>					
81b	IV infusions of GPIIb-IIIa platelet inhibitors are prepared in patient care units by trained PRACTITIONERS <u>only</u> , using a kit containing the drug, supplies needed for preparation, and preparation instructions. <i>Scoring guideline: Score NOT APPLICABLE if you do not use GPIIb-IIIa inhibitors.</i>	<b>Not Applicable</b>				
82a	Pharmacists prepare all thrombolytic <u>bolus</u> doses.					
OR	<b>OR</b>					
82b	Thrombolytic <u>bolus</u> doses are prepared by trained PRACTITIONERS <u>only</u> , using a disease-specific kit, (e.g., stroke, acute myocardial infarction) containing the protocol, drug, supplies needed for preparation, and preparation instructions.					

Drug Storage, Stock, Standardization, and Distribution *continued*

## IV

- (A) No activity to implement  
 (B) Considered, but not implemented  
 (C) Partially implemented  
 (D) Fully implemented for some  
 (E) Fully implemented for all

## Self-Assessment Items

		(A)	(B)	(C)	(D)	(E)
83a	Pharmacists prepare all thrombolytic infusions.					
OR	OR					
83b	Thrombolytic infusions are prepared by trained PRACTITIONERS <u>only</u> , using a disease specific kit, (e.g., stroke, acute myocardial infarction) containing the protocol, drug, supplies needed for preparation, and preparation instructions.					
84	TURNAROUND TIME for emergent (stat) and urgent (now) drug delivery of antithrombotics from the pharmacy is consistent with the timeframes established by the hospital.					
85	All strengths of warfarin tablets dispensed within the facility are purchased from a single manufacturer to promote consistent bioavailability (warfarin is a narrow therapeutic index drug).					
86a	<b>In hospitals <u>WITHOUT</u> automated dispensing cabinets:</b> Warfarin is not available in unit stock.					
OR	OR					
86b	<b>In hospitals <u>WITH</u> automated dispensing cabinets:</b> Warfarin is available only in automated dispensing cabinets that are INTERFACED with the pharmacy information system; <u>and</u> warfarin doses cannot be removed from the cabinet until the order has been reviewed by pharmacy (not available via an override feature). <i>Scoring guideline: Score A or B if all automated dispensing cabinets are not INTERFACED with the pharmacy information system; If automated dispensing cabinets are INTERFACED with the pharmacy information system, score no higher than D if warfarin is available via override during hours when pharmacy services are not available.</i>					
87	Warfarin administration is scheduled for the same time each day, after INR results are available (e.g., afternoon, early evening).					

## V Medication Device Acquisition, Use, and Monitoring

- (A) No activity to implement  
 (B) Considered, but not implemented  
 (C) Partially implemented  
 (D) Fully implemented for some  
 (E) Fully implemented for all

### Self-Assessment Items

(A) (B) (C) (D) (E)

Core Characteristic	7					
	<p>The potential for human error is mitigated through careful procurement, maintenance, use, and standardization of devices used to deliver medications and provide test results.</p>					
88a	General infusion pumps are used for the administration of all IV infusions of all antithrombotics (including platelet inhibitors).					
OR	<b>OR</b>					
88b	SMART INFUSION PUMPS are used for the IV administration of all antithrombotics (including platelet inhibitors), with functionality employed to intercept and prevent wrong dose/wrong infusion rate errors due to misprogramming the pump, miscalculation, or an inaccurately prescribed medication. <i>Scoring guideline: If SMART INFUSION PUMPS are used in some patient care units, but not all areas where antithrombotics are administered, score D.</i>					
89	When multiple parenteral infusions are being administered, the distal ends of all tubing (and the pump channels, if multiple-channel pumps are used) are clearly and boldly labeled to prevent line mix-ups.					
90	When a new lot of reagent is received, point-of-care testing and monitoring devices used during antithrombotic therapy (e.g., activated clotting time, INR) are checked and recalibrated.					
91	When a new lot of reagent is used, an electronic quality control test <u>and</u> a liquid sample quality control test are performed on a predetermined schedule (e.g., weekly).					

## Competency and Staff Education

## VI

- A No activity to implement  
 B Considered, but not implemented  
 C Partially implemented  
 D Fully implemented for some  
 E Fully implemented for all

## Self-Assessment Items

A  B  C  D  E

Core Characteristic	8 ▶ PRACTITIONERS receive sufficient orientation to antithrombotic therapy, and undergo baseline and ongoing competency evaluation of knowledge and skills related to safe medication practices.					
92	All PRACTITIONERS who prescribe, dispense, administer, and/or monitor antithrombotic therapy receive initial training, <u>and</u> undergo baseline competency evaluation to demonstrate proficiency with their role in this drug therapy, <u>before</u> practicing independently.					
93	PRACTITIONERS who prescribe, dispense, administer, and/or monitor antithrombotic therapy are provided with the necessary support <u>and</u> time to attend internal and external educational programs related to management of this drug therapy.					
94	PRACTITIONERS who prescribe, dispense, administer, and/or monitor antithrombotic therapy are educated about any related new drugs added to the formulary and associated protocols/guidelines and restrictions <u>before</u> the drugs are used in the hospital.					
95	Pharmacists routinely provide nurses with important information about non-formulary antithrombotic drugs before dispensing the products to patient care areas for administration.					
96	A trained, multidisciplinary antithrombosis team is available 24 hours each day, and 7 days each week, to manage patients with complicated thrombotic episodes. <i>Scoring guideline: Do not score E if the antithrombosis team is not, at a minimum, available on-call 24 hours each day and 7 days each week.</i>					
97	Staff members who educate patients about the proper use of point-of-care self-testing devices (e.g., activated clotting time, INR) have demonstrated proficiency with the use <u>and</u> maintenance of the instruments.					
98	PRACTITIONERS who prescribe, dispense, administer, and/or monitor antithrombotic therapy receive ongoing information about related errors that occur within the organization, error-prone situations, errors occurring in <i>other</i> healthcare facilities, and strategies to prevent such errors.					

## VII Patient Education

- A** No activity to implement
- B** Considered, but not implemented
- C** Partially implemented
- D** Fully implemented for some
- E** Fully implemented for all

### Self-Assessment Items

**A** **B** **C** **D** **E**

Core Characteristic	9	<i>Patients are included as active partners in their antithrombotic therapy through education about their medications and ways to avert errors.</i>				
99	When initiating antithrombotic therapy, patients and/or their CAREGIVERS receive information about the purpose, action, and side effects of the therapy; <u>and</u> information about the specific drugs being used, including the generic and brand (if applicable) names, strength/dose, and frequency/duration of use.					
100	All patient/CAREGIVER education for antithrombotic therapy is documented on a multidisciplinary patient education record or other appropriate record, which is kept at the bedside or in the patient's medical record for reference.					
101	Inpatients and outpatients on warfarin, and/or their CAREGIVERS, receive verbal <u>and</u> up-to-date written information (8 <sup>th</sup> grade reading level or lower) about proper dietary measures and their effect on overall therapy goals.					
102	Inpatients and outpatients on antithrombotic therapy, and/or their CAREGIVERS, receive verbal <u>and</u> up-to-date written information (8 <sup>th</sup> grade reading level or lower) about how their antithrombotic therapy is monitored and the need for close medical supervision and adherence to prescribed treatment.					
103	Inpatients and outpatients on antithrombotic therapy, and/or their CAREGIVERS, receive verbal <u>and</u> up-to-date written information (8 <sup>th</sup> grade reading level or lower) about the signs and symptoms of bleeding or thromboembolic complications.					
104	Inpatients and outpatients on antithrombotic therapy, and/or their CAREGIVERS, receive verbal <u>and</u> up-to-date written information (8 <sup>th</sup> grade reading level or lower) about drug and herbal interactions, <u>and</u> are provided with a list of over-the-counter drugs, nutritional supplements, and herbal products to avoid.					
105	Inpatients and outpatients on warfarin are informed that Coumadin® and warfarin contain the same ingredients, to avoid the potential for duplicate therapy if the drug is prescribed using both brand and generic names.					
106	Inpatients and outpatients on warfarin are instructed that their dose may change during the course of treatment based on their laboratory results.					
107	Inpatients and outpatients on warfarin are instructed on how to manage dose changes safely, once at home, when their existing tablet strength differs from a newly prescribed dose.					

Patient Education *continued*

## VII

- A No activity to implement  
 B Considered, but not implemented  
 C Partially implemented  
 D Fully implemented for some  
 E Fully implemented for all

## Self-Assessment Items

		A	B	C	D	E
108	Inpatients and outpatients (or CAREGIVERS) who will be administering heparin products via the subcutaneous route at home demonstrate proficiency with the techniques and methods of drug administration prior to discharge or leaving the facility.					
109	Inpatients and outpatients (or CAREGIVERS) who will use point-of-care testing devices demonstrate proficiency with operation of the device prior to discharge or leaving the facility.					
110	Facility-approved instructional tools such as videos, drug information booklets, and special brochures (8 <sup>th</sup> grade reading level or lower) are routinely used to complement patient education about antithrombotic therapy.					
111	For inpatients, education about antithrombotics begins when therapy is initiated; <u>and</u> most of the information about their antithrombotic therapy after discharge is presented at least 24 hours prior to discharge.					
112	Prior to discharge, inpatients on warfarin therapy have a confirmed appointment scheduled with the laboratory, physician, or antithrombotic clinic; <u>and</u> the importance of keeping follow-up appointments is stressed.					
113	Patients diagnosed with HIT are instructed to communicate this information to all physicians and other healthcare providers.					
114	Pharmacists are available for consultations to assist with patient education when <u>any</u> healthcare PRACTITIONER (physician, pharmacist, nurse) identifies a patient who is at risk for non-adherence with their prescribed antithrombotic therapy.					

## VIII Quality Processes and Risk Management

- (A) No activity to implement  
 (B) Considered, but not implemented  
 (C) Partially implemented  
 (D) Fully implemented for some  
 (E) Fully implemented for all

### Self-Assessment Items

(A) (B) (C) (D) (E)

Core Characteristic	10					
	<p>▶ <i>PRACTITIONERS are stimulated to detect and report errors, and interdisciplinary teams regularly analyze errors that have occurred within the organization and in other organizations for the purpose of redesigning systems to best support safe practitioner performance.</i></p>					
115	In addition to PRACTITIONER reporting systems, computer markers or triggers for selected <i>drug orders</i> (e.g., reversal agents such as vitamin K <sub>1</sub> and protamine) are tracked and used to enhance detection of potential adverse drug events (both medication errors and adverse drug reactions).					
116	In addition to PRACTITIONER reporting systems, computer markers or triggers for selected <i>laboratory tests</i> (e.g., aPTT greater than 100 seconds, INR greater than “x” as defined by facility, platelet count less than 100,000/mm <sup>3</sup> ) are used to enhance detection of potential adverse drug events (both medication errors and adverse drug reactions).					
117	A convened interdisciplinary team routinely analyzes and uses <i>internal</i> error experiences to target improvements in the use of antithrombotic agents.					
<b>FAQ</b> 118	A convened interdisciplinary team routinely analyzes and uses <i>external</i> published error experiences from other organizations to <i>proactively</i> target improvements in the use of antithrombotic agents.					
119	A convened interdisciplinary team routinely evaluates the literature for new evidence-based practices and technologies that have been proven to be effective in reducing antithrombotic errors and improving patient outcomes to determine if it can improve its own antithrombotic therapy.					
120	On a regular basis a convened interdisciplinary team <i>retrospectively</i> reviews cases in which an aPTT or INR falls outside of predetermined values; <u>and</u> the team makes organization-wide process recommendations aimed at reducing the variation in achieving and maintaining therapeutic drug levels.					
121	The organization performs ongoing review of compliance with established antithrombotic protocols; <u>and</u> a convened interdisciplinary team recommends and facilitates action to reduce noncompliance.					

# Quality Processes and Risk Management *continued*

- A** No activity to implement
- B** Considered, but not implemented
- C** Partially implemented
- D** Fully implemented for some
- E** Fully implemented for all

## Self-Assessment Items

- A** | **B** | **C** | **D** | **E**

Core Characteristic	11					
<p><i>Simple redundancies that support a system of INDEPENDENT DOUBLE CHECKS are used for vulnerable parts of the antithrombotic therapy to detect and correct serious errors before they reach patients.</i></p>						
122	Pharmacists perform and document an INDEPENDENT DOUBLE CHECK of all calculations, preparations, and labeling of antithrombotic agents, using a copy of the order for verification, prior to dispensing the drugs.					
123	Antithrombotic agents removed from unit stock and/or automated dispensing cabinets are independently double checked against the actual order by another PRACTITIONER prior to drug administration; <u>and</u> the double check is documented.					
124	With each new bag/bottle, or change in the rate of infusion for IV antithrombotics (including platelet inhibitors), one PRACTITIONER reads the solution for administration and another PRACTITIONER <u>independently</u> verifies and documents that the correct drug, drug concentration, rate of infusion, patient, channel selection (for multiple-channel pumps), and line attachments have been selected before starting the infusion.					
125	MACHINE-READABLE CODING (e.g., bar coding) is used to verify the selection of antithrombotic agents prior to preparing and/or dispensing these medications (includes robotic dispensing).					

Transfer the password found on the inside back cover of the self-assessment: \_\_\_\_\_  
(password)

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*The 2005 ISMP Medication Safety Self Assessment<sup>®</sup>  
for Antithrombotic Therapy in Hospitals.*

REQUIRED FOR ENTRY OF DATA

PASSWORD

**IMPORTANT:** Your password should be maintained in a safe location so it can be used later to compare your findings with other demographically similar hospitals.



Institute for Safe Medication Practices (ISMP)

