

# DEEP VEIN THROMBOSIS RISK ASSESSMENT

Gregory P. DeConciliis, Administrator / PCA Coordinator Boston Out-Patient Surgical Suites

Deep vein thrombosis (DVT) and pulmonary embolus (PE) continue to be major risk factors for patients undergoing surgical or other invasive procedures. Prevention of venous thromboembolism (VTE), which includes DVT and PE, is an important aspect of patient care before, during and after surgery. Risk factors for patients should be identified and used to guide pharmacological and/or mechanical thromboprophylaxis.

Though risks are less with shorter hospitalizations and early ambulation, VTE can occur, even following outpatient surgical procedures, and the risk can persist for weeks past discharge.<sup>1</sup> The American College of Chest Physicians (ACCP) recommends development of a formal strategy or protocol, addressing the prevention of thromboembolic complications.<sup>2</sup> The Association of periOperative Registered Nurses (AORN) approved recommendations for prevention of DVT, consistent with the ACCP's recommendation for a protocol that is inclusive of a preoperative patient assessment to determine DVT risk factors. The recommendations also addressed pharmacologic and mechanical intervention, and patient and caregiver education. AORN advised the inclusion of a computer-generated alert identifying patients at risk for developing DVT.<sup>3</sup> Our facility was already utilizing pre-op screening software intended to assess patients' prior medical and surgical history, and the software was revised to include this feature.

We initially set our parameters based on the Caprini VTE Risk Assessment Tool.<sup>4</sup> (See sample Risk Assessment Tool, Figure 1, on page 2.) We assigned a weight of points based on particular questions answered. Every patient coming into our facility completes our online pre-op screening, including the DVT Risk Assessment. The DVT risk assessment tool helps guide the providers in determining whether mechanical or pharmacological prophylaxis is indicated.

Our process is constantly being analyzed as new medications come to market that may have inherent hypercoagulable properties. In addition, our policy states that our providers are able to adjust the assessment's recommendation for prophylaxis, based on clinical judgment.

A quality study has been initiated for ongoing analysis in regards to our incidence of DVT, since initiation of our computergenerated risk assessment. The DVT risk in our patients is low and to date, results of the initiative have revealed no marked difference. However, clinical personnel rest easier knowing that there is a standardized process for assessing DVT risk in patients who undergo procedures at our facility.

#### **REFERENCES:**

- 1. Pannucci, CJ, et.al. Identifying Patients at High Risk for Venous Thromboembolism Requiring Treatment after Outpatient Surgery. Ann Surg. 2012 Jun; 255(6):1093-9.
- 2. Antithrombotic therapy for VTE disease: antithrombotic therapy and prevention of thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines.
- 3. *Recommended Practice for Prevention of Deep Vein Thrombosis.* Association of peri Operative Registered Nurses. March 1, 2011.
- 4. Caprini, JA. Risk Assessment as a Guide for the Prevention of the Many Faces of Venous Thromboembolism, AM J Surg 2010; 199:S3.

The most recent QPSD Advisory, Venous Thromboembolism Risk Assessment and Prevention, just published and available on the QPSD website, is a timely reference and supports Ambulatory Surgical Centers in their development of processes for pre-surgical VTE risk assessment. Care coordination with accurate pre and post procedure assessment, as well as follow-up on patient compliance with instructions post discharge, are all important to address. The Advisory is available at: http://www.mass.gov/eohhs/docs/borim/physicians/pca-notifications/vte-risk-assessment.pdf.



FIGURE 1

Hanned Minor Surgery Yes No   Algor Surgery within the past month Yes No   Allor Surgery within the past month Yes No   Joy ou have a Bitch of an unexplained stillibor infant or a recurrent Yes No   Subtorati Yes No Yes   Joy ou have a history of raume within the last month? Yes No   Subtorati Yes No Yes   Subtorati Yes No Yes   Subtorati Yes No   Subtorati Yes No   Sue you had a bitsk factor Represente S Pointis Yes <th>Prophylaxis Orders         Thrombosis Risk Factor Asset (Choose all that apply         Lack Risk Factor Represents (Choose all that apply)         Each Risk Factor Represents (Choose all that apply)         Major Surgery Within the past month         Do you have varicose veins?         History of Inflammatory Bowel Disease (Ucerative Coll         Do you have leg sweiling/ edema?         BMI &gt;25         History of a Heart Attack/MI         History of Congestive Heart Failure (CHF)         Did you have a major Infection/sepsis less than one moder for you currently on bed rest or restricted mobility?         Do you use Birth Control Pills (BCP) or Hormone Represents of you have a history of an unexplained stilliborn infar spontaneous abortion?         Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery         Have you had a broken hip, leg or pelvis within last most car accident)         Stroke/CVA within the last month       Patient may in Active Bleed, Ingestion of Oral Anticoage CLINCAL CONSIDI CLINCAL CONSIDI CLINCAL CONSIDI         Patient may in the la</th> <th>Point Point Yes No Yes No</th> <th>DOB:       Physician:         DOS:       Account #:         Each Risk Factor Represents 2 Points         Age 61-74 years       Yes         History of Cancer       Yes         Planned Major Surgery       Yes         Have you had laparoscopic surgery in the last month?       Yes         Have you been confined to bed rest for more than 72 hours?       Yes         Have you been treated with a plaster cast within the past month?       Yes         Subtotal       Yes</th>	Prophylaxis Orders         Thrombosis Risk Factor Asset (Choose all that apply         Lack Risk Factor Represents (Choose all that apply)         Each Risk Factor Represents (Choose all that apply)         Major Surgery Within the past month         Do you have varicose veins?         History of Inflammatory Bowel Disease (Ucerative Coll         Do you have leg sweiling/ edema?         BMI >25         History of a Heart Attack/MI         History of Congestive Heart Failure (CHF)         Did you have a major Infection/sepsis less than one moder for you currently on bed rest or restricted mobility?         Do you use Birth Control Pills (BCP) or Hormone Represents of you have a history of an unexplained stilliborn infar spontaneous abortion?         Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery         Have you had a broken hip, leg or pelvis within last most car accident)         Stroke/CVA within the last month       Patient may in Active Bleed, Ingestion of Oral Anticoage CLINCAL CONSIDI CLINCAL CONSIDI CLINCAL CONSIDI         Patient may in the la	Point Point Yes No Yes No	DOB:       Physician:         DOS:       Account #:         Each Risk Factor Represents 2 Points         Age 61-74 years       Yes         History of Cancer       Yes         Planned Major Surgery       Yes         Have you had laparoscopic surgery in the last month?       Yes         Have you been confined to bed rest for more than 72 hours?       Yes         Have you been treated with a plaster cast within the past month?       Yes         Subtotal       Yes
Thrombosis Risk Factor Assessment (Choose all that apply)       DB:       Physician:         DB:       DC:       Account #:         DB:       Account #:       Account #:         DD:       DB:       Account #:         DD:       DC:       DC:       DC:       Account #:         DD:       DC:	Thrombosis Risk Factor Ass (Choose all that apply)           Each Risk Factor Represents I           Age 41-60 years         Planned Minor Surgery           Major Surgery within the past month         Do you have varicose veins?           History of Inflammatory Bowel Disease (Uicerative Coll         Do you have leg sweiling/ edema?           BMI >25         History of a Heart Attack/MI           History of Congestive Heart Failure (CHF)         History of Congestive Heart Failure (CHF)           History of Congestive Heart Failure (CHF)         Iless than 1 month ago           Did you have a major infection/sepsis less than one moder you currently on bed rest or restricted mobility?         Do you use Birth Control Pills (BCP) or Hormone Rep           Are you pregnant or have you had a baby within the last         Do you have a history of an unexplained stillborn infar spontaneous abortion?           Each Risk Factor Represents 5           Recent elective total hip or knee replacement surgery           Have you had a broken hip, leg or pelvis within last moder or accident)           Stroke/CVA within the last month           Patient may not be reader of Oral Anticoage CLINCAL CONSID           Patient may not be reader of Oral Anticoage CLINCAL CONSID           Patient may not be reader of Oral Anticoage CLINCAL CONSID           Patient may not be reader of Oral Anticoage CLINCAL CONSID           Patient may not	) Point Yes No Yes No Yes No tis or Crohn's disease) Yes No Yes No Yes No Yes No Yes No Yes No Yes No	DOB:       Physician:         DOS:       Account #:         Each Risk Factor Represents 2 Points         Age 61-74 years       Yes         History of Cancer       Yes         Planned Major Surgery       Yes         Have you had laparoscopic surgery in the last month?       Yes         Have you been confined to bed rest for more than 72 hours?       Yes         Have you been treated with a plaster cast within the past month?       Yes         Subtotal       Yes
Informations       Reach Risk Factor Represents 2 Point         Import Surgery       See Not Surgery         Specific Stress       Yes         Age 61-40 years       Yes         Yes         M1 > 25       Yes         M1 > 25       Yes         M2 years was agin Infectordrosphise isses than one month ago?       Yes         Jo yue have a altatory of blood clots including previous DVT or PE?       Yes         No yue was altatory of blood clots including previous DVT or PE?       Yes         No yue was altatory of blood clot disease?       Yes         So yue have a family history of blood clot diseases?       Yes	(Choose all that apply           Each Risk Factor Represents           Age 41-60 years         Planned Minor Surgery           Major Surgery within the past month         Do you have varicose veins?           History of Inflammatory Bowel Disease (Ulcerative Coll         Do you have leg swelling/ edema?           BMI >25         History of a Heart Attack/MI           History of Congestive Heart Failure (CHF)         History of Congestive Heart Failure (CHF)           History of Congestive Heart Failure (CHF)         Do you have a major infection/sepsis less than one moder and the provided mobility?           Do you use Birth Control Pills (BCP) or Hormone Represented mobility?         Do you use Birth Control Pills (BCP) or Hormone Represented and the provided mobility?           Do you have a history of an unexplained stilliborn infar spontaneous abortion?         Each Risk Factor Representes 5           Recent elective total hip or knee replacement surgery         Have you had a broken hip, leg or peivis within last moth car accident)           Stroke/CVA within the last month         Patient may in Active Bleed, Ingestion of Oral Anticoarge CLINCAL CONSIDI CLICAL CON	) Point Yes No Yes No Yes No tis or Crohn's disease) Yes No Yes No Yes No Yes No Yes No Yes No Yes No	DOS: Account #:         Each Risk Factor Represents 2 Points         Age 61-74 years       Yes         History of Cancer       Yes         Planned Major Surgery       Yes         Have you had laparoscopic surgery in the last month?       Yes         Have you been confined to bed rest for more than 72 hours?       Yes         Have you been treated with a plaster cast within the past month?       Yes         Subtotal       Yes
(Choose all that apply)         Each Risk Factor Represents 1 Point         (yee No         Named Minor Surgery       Vee       No         Age 51-74 years       Yes       No         Planned Minor Surgery       Vee       No         Band Minor Surgery       Vee       No         Do you have variose veins?       Yes       No         Do you have variose veins?       Yes       No         Do you have seles swelling/ dema?       Yes       No         Subtrati       Yes	Each Risk Factor Represents 1           Age 41-60 years         Planned Minor Surgery           Major Surgery within the past month         Do you have varicose veins?           History of Inflammatory Bowel Disease (Ulcerative Coll         Do you have leg swelling/ edema?           BMI >25         History of a Heart Attack/MI           History of Congestive Heart Failure (CHF)         History of Congestive Heart Failure (CHF)           History of Congestive Heart Failure (CHF)         History of Lung Disease (COPD/Emphysema) Including less than 1 month ago           Did you have a major infection/sepsis less than one moder you currently on bed rest or restricted mobility?         Do you use Birth Control Pilis (BCP) or Hormone Rep           Are you pregnant or have you had a baby within the last Do you have a history of an unexplained stillborn infar spontaneous abortion?         Each Risk Factor Represents 5           Recent elective total hip or knee replacement surgery         Have you had a broken hip, leg or pelvis within last moth car accident)           Stroke/CVA within the last month         Patient may not be an accident)           Stroke/CVA within the last month         Patient may not be an accident)           Total Risk         Risk Level         Incidence of DVT           0-1         Low Risk         2%               2             Moderate Risk             10-20%               3-4             Higher Risk	Point Yes No Yes No Yes No tis or Crohn's disease) Yes No Yes No Yes No Yes No Yes No Yes No	Each Risk Factor Represents 2 Points         Age 61-74 years       Yes         History of Cancer       Yes         Planned Major Surgery       Yes         Have you had laparoscopic surgery in the last month?       Yes         Have you been confined to bed rest for more than 72 hours?       Yes         Have you been treated with a plaster cast within the past month?       Yes         Subtotal       Subtotal
Sige 41-60 years       Yes       No         Hanned Micro Surgery       Yes       No         Halor Surgery within the past month       Yes       No         Halor Surgery       Yes       No         Ago 7 Surgery within the past month       Yes       No         Synu have vances veins?       Yes       No         Have you bace index to the past month?       Yes       No         Have you bace index to the past month?       Yes       No         No       Yes       No       No         Have you been contined to bed reat for more than 72 hours?       Yes       No         No       Each Risk Factor Represents 3 Points       Subtots:         Have you been contact within the past month?       Yes       No         Marce 3 a major infaction/sepsis less than one month ago?       Yes       No         Da you have a major infaction/sepsis less than one month ago?       Yes       No         Da you have a hatory of numexplanded stillborn infant or a recurrent spontaneous abortion?       Yes       No         Souta was a history of numexplanded stillborn infant or a recurrent spontaneous abortion?       Yes       No         Souta was a history of numexplanded stillborn infant or a recurrent spontaneous abortion?       Yes       No         Souta was a history of n	Age 41-60 years         Planned Minor Surgery         Major Surgery within the past month         Do you have varicose veins?         History of Inflammatory Bowel Disease (Ulcerative Coll         Do you have leg swelling/ edema?         BMI >25         History of a Heart Attack/MI         History of Lung Disease (COPD/Emphysema) Including less than 1 month ago         Did you have a major infection/sepsis less than one moder         Are you currently on bed rest or restricted mobility?         Do you have a halstory of an unexplained stillborn infart         Spontaneous abortion?         Each Risk Factor Represents 9         Recent elective total hip or knee replacement surgery         Have you had a broken hip, leg or pelvis within is at moth         Co you have a history of trauma within the last month         Co you have a history of trauma within the last month         Co you have a history of trauma within the last month         Co you have a history of trauma within the last month         Co you have a history of trauma within the last month         Co you have a history of trauma within the last month         Car accident)         Stroke/CVA within the last month         Patient may not be a	Yes No Yes No	Age 61-74 years       Yes         History of Cancer       Yes         Planned Major Surgery       Yes         Have you had laparoscopic surgery in the last month?       Yes         Have you been confined to bed rest for more than 72 hours?       Yes         Have you been treated with a plaster cast within the past month?       Yes         Subtotal       Subtotal
Hanned Minor Surgery Yes No   Algor Surgery within the past month Yes No   Allor Surgery within the past month Yes No   Joy ou have a Bitch of an unexplained stillibor infant or a recurrent Yes No   Subtorati Yes No Yes   Joy ou have a history of raume within the last month? Yes No   Subtorati Yes No Yes   Subtorati Yes No Yes   Subtorati Yes No   Subtorati Yes No   Sue you had a bitsk factor Represente S Pointis Yes <td>Planned Minor Surgery Major Surgery within the past month Do you have varicose veins? History of Inflammatory Bowel Disease (Ulcerative Coll Do you have leg swelling/ edema? BMI &gt;25 History of a Heart Attack/MI History of Congestive Heart Failure (CHF) History of Lung Disease (COPD/Emphysema) Including less than 1 month ago Did you have a major infection/sepsis less than one mo Are you currently on bed rest or restricted mobility? Do you use Birth Control Pills (BCP) or Hormone Rep Are you pregnant or have you had a baby within the last Do you have a history of an unexplained stilliborn infar spontaneous abortion? Each Risk Factor Represents 5 Recent elective total hip or knee replacement surgery Have you have a history of trauma within the last month car accident) Stroke/CVA within the last month Active Bleed, ingestion of Oral Anticoag CLINICAL CONSIDI Patient may n Active Bleed, ingestion of Oral Anticoag CLINICAL CONSIDI Patient may not be Patients Total Risk Risk Level Incidence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%</td> <td>Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No</td> <td>History of Cancer Yes Planned Major Surgery Yes Have you had laparoscopic surgery in the last month? Yes Have you been confined to bed rest for more than 72 hours? Yes Have you been treated with a plaster cast within the past month? Yes Subtotal</td>	Planned Minor Surgery Major Surgery within the past month Do you have varicose veins? History of Inflammatory Bowel Disease (Ulcerative Coll Do you have leg swelling/ edema? BMI >25 History of a Heart Attack/MI History of Congestive Heart Failure (CHF) History of Lung Disease (COPD/Emphysema) Including less than 1 month ago Did you have a major infection/sepsis less than one mo Are you currently on bed rest or restricted mobility? Do you use Birth Control Pills (BCP) or Hormone Rep Are you pregnant or have you had a baby within the last Do you have a history of an unexplained stilliborn infar spontaneous abortion? Each Risk Factor Represents 5 Recent elective total hip or knee replacement surgery Have you have a history of trauma within the last month car accident) Stroke/CVA within the last month Active Bleed, ingestion of Oral Anticoag CLINICAL CONSIDI Patient may n Active Bleed, ingestion of Oral Anticoag CLINICAL CONSIDI Patient may not be Patients Total Risk Risk Level Incidence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%	Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No	History of Cancer Yes Planned Major Surgery Yes Have you had laparoscopic surgery in the last month? Yes Have you been confined to bed rest for more than 72 hours? Yes Have you been treated with a plaster cast within the past month? Yes Subtotal
Agior Surgery within the past month.       ives       iv	Major Surgery within the past month Do you have varicose veins? History of Inflammatory Bowel Disease (Ulcerative Coll Do you have leg swelling/ edema? BMI >25 History of a Heart Attack/MI History of Congestive Heart Fallure (CHF) History of Lung Disease (COPD/Emphysema) Including less than 1 month ago Did you have a major infection/sepsis less than one mode Are you currently on bed rest or restricted mobility? Do you use Birth Control Pilis (BCP) or Hormone Rep Are you pregnant or have you had a baby within the last Do you have a history of an unexplained stilliborn infart spontaneous abortion? Each Risk Factor Represents 5 Recent elective total hip or knee replacement surgery Have you had a broken hip, leg or pelvis within last mod Do you have a history of trauma within the last month car accident) Stroke/CVA within the last month Patient may not be Patient may not be Patients Total Risk Risk Level Incidence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%	Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No	Planned Major Surgery     Yes       Have you had laparoscopic surgery in the last month?     Yes       Have you been confined to bed rest for more than 72 hours?     Yes       Have you been treated with a plaster cast within the past month?     Yes       Subtotal     Subtotal
Do you have varices weins?       Yes       <	Do you have varicose veins?         History of Inflammatory Bowel Disease (Ulcerative Coll         Do you have leg swelling/ edema?         SMI >25         History of a Heart Attack/MI         History of Congestive Heart Failure (CHF)         History of Lung Disease (COPD/Emphysema) including less than 1 month ago         Did you have a major infection/sepsis less than one modare you currently on bed rest or restricted mobility?         Do you use Birth Control Pillis (BCP) or Hormone Rep         Are you pregnant or have you had a baby within the last         Do you have a history of an unexplained stilliborn infar         spontaneous abortion?         Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery         Have you had a broken hip, leg or pelvis within last modo         Do you have a history of trauma within the last month         Car accident)         Stroke/CVA within the last month         Patient may not be a         Patient story         Out and Risk       Rest         Out and a broken hip, leg or pelvis within the last month         Car accident)       Patient may not be a         Patient may not be a       Patient consing <t< td=""><td> Yes ↓ No tis or Crohn's disease) Yes No Yes No Yes No Yes No Yes No Yes No</td><td>Have you had laparoscopic surgery in the last month? Yes Have you been confined to bed rest for more than 72 hours? Yes Have you been treated with a plaster cast within the past month? Yes Subtotal</td></t<>	Yes ↓ No tis or Crohn's disease) Yes No Yes No Yes No Yes No Yes No Yes No	Have you had laparoscopic surgery in the last month? Yes Have you been confined to bed rest for more than 72 hours? Yes Have you been treated with a plaster cast within the past month? Yes Subtotal
Italeary of Inflammatory Bowel Disease (Ulcerative Coilits or Crohn's disease)       Have you been confined to bad rest for more than 72 hours?       Yes       No         Do you have leg swolling? dema?       Yes       No         Bial 225       Yes       No         Do you have leg swolling? dema?       Yes       No         Bial 225       Yes       No         Bial 225       Yes       No         Bial 225       Yes       No         Bial 225       Yes       No         Bias than 1 moth ago?       Yes       No         Do you have a major Infaction/sepals leas than one month ago?       Yes       No         Do you have a family history of blood clots including previous DVT or PE?       Yes       No         Do you have a family history of blood clots including previous DVT or PE?       Yes       No         Do you have a history of an unexplained stillborn infant or a recurrent       Yes       No         Spontaneous abortion?       Yes       No       No         Ob you have a history of an unexplained stillborn infant or a recurrent       Yes       No         Spontaneous abortion?       Yes       No       No         Subtoral:       Yes       No       No         Spontanea history of raume within the last month?       <	Allstory of Inflammatory Bowel Disease (Ulcerative Col Do you have leg swelling/ edema? MI >25 History of a Heart Attack/MI History of Congestive Heart Failure (CHF) History of Lung Disease (COPD/Emphysema) including less than 1 month ago Did you have a major infection/sepsis less than one me we you currently on bed rest or restricted mobility? Do you use Birth Control Pills (BCP) or Hormone Rep we you pregnant or have you had a baby within the last the you pregnant or have you had a baby within the last Do you have a history of an unexplained stilliborn infar spontaneous abortion? Each Risk Factor Represents S Recent elective total hip or knee replacement surgery Have you had a broken hip, leg or peivis within last mother car accident) Stroke/CVA within the last month Patient may no Active Bieed, ingestion of Oral Anticoag CLINICAL CONSID Patient may no Patients Total Risk Risk Level Incidence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%	tis or Crohn's disease) Yes No Yes No Yes No Yes No Yes No Yes No	Have you been confined to bed rest for more than 72 hours? Yes Have you been treated with a plaster cast within the past month? Yes Subtotal
Yes       No         M1>25       Yes       No         M1>25       Yes       No         Mistory of Congestive Heart Failure (CHF)       Yes       No         Istory of Lung Disease (CDP)/Emphysema) Including pneumonia       Yes       No         Ises than 1 month ago       Yes       No         Mi you have a major Infection/sepsis less than one month ago?       Yes       No         Mo you have a major Infection/sepsis less than one month ago?       Yes       No         No you use Birth Control Pills (BCP) or Hormone Replacement Therapy (HRTT?       Yes       No         No you use Birth Control Pills (BCP) or Hormone Replacement Therapy (HRTT?       Yes       No         No you use Birth Control Pills (BCP) or Hormone Replacement Therapy (HRTT?       Yes       No         No you use Birth Control Pills (BCP) or Hormone Replacement Therapy (HRTT?       Yes       No         No you use Birth Control Pills (BCP) or Hormone Replacement Source       Yes       No         Yes       No       Yes       No         Subtotal:       Yes       No       Subtotal:         Yes       No       Yes       No         Subtotal:       Yes       No       Subtotal:         Subtotal:       Yes       No       Subtotal:     <	No you have leg swelling/ edema?         MI >25         Ilstory of a Heart Attack/MI         Ilstory of Lung Disease (COPD/Emphysema) including less than 1 month ago         Id you have a major infection/sepsis less than one major re you currently on bed rest or restricted mobility?         Io you have a major infection/sepsis less than one major re you currently on bed rest or restricted mobility?         Io you have a history of an unexplained stilliborn infar spontaneous abortion?         Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery lave you had a broken hip, leg or pelvis within last month car accident)         toke/CVA within the last month         Patient may no Active Bleed, ingestion of Oral Anticoag CLINICAL CONSIDD Patient may not be - Patients         Total Risk       Risk Level       Incidence of Factor Score         DVT       0-1       Low Risk       2%         2       Moderate Risk       10-20%         3-4       Higher Risk       20-40%	Yes No Yes No Yes No Yes No Yes No	Have you been treated with a plaster cast within the past month? Yes Subtotal
to you have leg availing/ edema?       Yes       No         Mi>25       Yes       No         Mistory of A Heart Attack/MI       Yes       No         Istory of Congestive Heart Failure (CHF)       Yes       No         Ites than 1 month ago       Yes       No         re you currently on bed reat or restricted mobility?       Yes       No         you have a history of blood clots including previous DVT or PE?       Yes       No         you have a history of an unexplained stillborn infant or a recurrent       Yes       No         spontaneous abortion?       Yes       No       Yes       No         you have a history of trauma within the last month?       Yes       No       Yes       No         yes you had a broken hijn (ago rapki/s within last month?       Yes       No       Yes       No         yes you had a broken hi	MI >25         Ilstory of a Heart Attack/MI         Ilstory of Congestive Heart Failure (CHF)         Ilstory of Lung Disease (COPD/Emphysema) including less than 1 month ago         old you have a major infection/sepsis less than one mainer you currently on bed rest or restricted mobility?         ioo you use Birth Control Pills (BCP) or Hormone Reporter you pregnant or have you had a baby within the last or you have a history of an unexplained stillborn infart spontaneous abortion?         Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery lave you had a broken hip, leg or peivis within last moth car accident)         troke/CVA within the last month         Patient may n         Active Bleed, ingestion of Oral Anticoag         DVT         O-1         Low Risk         2         Moderate Risk         10-20%         3-4	Yes No Yes No Yes No Yes No	Subtotal
bit and a stream growth is at the stream is a function of a fleart Attack/MI       This is not go in the stream is a fleart Attack/MI       Yes No         Istory of a fleart Attack/MI       Yes No       Each Risk Factor Represents 3 Points         Istory of Long Disease (COPD/Emphysem) including pnoumonia       Yes No         Ises than 1 month ago       Yes No         No you have a major infaction/sepsis less than one month ago?       Yes No         No you use Birth Control Pills (BCP) or Hormone Replacement Therapy (HRTY)       Yes No         Yes you pregnant or have you had a baby within the last month?       Yes No         you use a bistory of a unexplained stillborn infant or a recurrent spontaneous abortion?       Yes No         yes you had a broken thi, log or pelvis within last month?       Yes No         yes you had a broken thi, log or pelvis within last month?       Yes No         yes you had a broken thi, log or pelvis within last month?       Yes No         yes you had a broken thi, log or pelvis within last month?       Yes No         yes you had a broken thi, log or pelvis within last month?       Yes No         yes you had a broken thi, log or pelvis within last month?       Yes No         yes you had a broken thi, log or pelvis within last month?       Yes No         yes you had a broken thi, log or pelvis within last month?       Yes No         bo you have a falstory of frauma within the last mont	IMI >25         Ilistory of a Heart Attack/MI         Ilistory of Congestive Heart Fallure (CHF)         Ilistory of Lung Disease (COPD/Emphysema) including less than 1 month ago         Did you have a major infection/sepsis less than one may re you currently on bed rest or restricted mobility?         Do you use Birth Control Pillis (BCP) or Hormone Rep are you pregnant or have you had a baby within the last yo you have a history of an unexplained stillborn infar spontaneous abortion?         Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery lave you had a broken hip, leg or peivis within last motion car accident)         troke/CVA within the last month car accident)         Patient may in Active Bleed, ingestion of Oral Anticoag CLINICAL CONSID Patient may no Active Bleed, ingestion of Oral Anticoag CLINICAL CONSID Patient may no CLINICAL CONSID Patient may no CLINICAL CONSID Patient may no CLINICAL CONSID         Total Risk       Risk Level       Incidence of Factor Score         QVT       0-1       Low Risk       2%         2       Moderate Risk       10-20%         3-4       Higher Risk       20-40%	Yes No Yes No Yes No	
istory of a Heart Attack/Mi       Yes       No         itatory of Congestive Heart Failure (CHF)       Yes       No         less than 1 month ago       Yes       No         less than 1 month ago       Yes       No         log volume a stand in decide//sepsis less than one month ago?       Yes       No         log volume a major infection/sepsis less than one month ago?       Yes       No         log volume a family history of blood clots including previous DVT or PE?       Yes       No         log volume a family history of blood clots including previous DVT or PE?       Yes       No         log volume a family history of blood clots including previous DVT or PE?       Yes       No         log volume a family history of blood clots including previous DVT or PE?       Yes       No         log volume a family history of blood clots including previous DVT or PE?       Yes       No         log volume a family history of blood clots including previous DVT or PE?       Yes       No         log volume a family history of blood clots including previous DVT or PE?       Yes       No         log volume a family history of blood clots including previous DVT or PE?       Yes       No         log volume a family history of blood clots including previous DVT or PE?       Yes       No         log volume a family history of blood clots including pre	Allstory of a Heart Attack/MI History of Congestive Heart Fallure (CHF) History of Lung Disease (COPD/Emphysema) including less than 1 month ago Did you have a major infection/sepsis less than one mu- three you currently on bed rest or restricted mobility? Do you use Birth Control Pills (BCP) or Hormone Rep- tore you pregnant or have you had a baby within the last Do you have a history of an unexplained stillborn infar spontaneous abortion? Each Risk Factor Represents 5 Recent elective total hip or knee replacement surgery Have you had a broken hip, leg or peivis within last mothor car accident) Stroke/CVA within the last month Patient may in Active Bleed, ingestion of Oral Anticoag CLINICAL CONSIDI Patient may no Patients Total Risk Risk Level Incldence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%	Yes No Yes No	
Itistory of Congestive Heart Failure (CHF)       Yes       No         Itistory of Lung Disease (COPD/Emphysems) including pneumonia       Yes       No         Ites than 1 month ago       Yes       No         Ites than 1 month ago       Yes       No         Vid you have a major Infaction/sepsis less than one month ago?       Yes       No         Yes       No       Do you have a family history of blood clot including previous DVT or PE?       Yes       No         Yes you use Bith Control Pills (BCP) or Hormone Replacement Therapy (HRTY?       Yes       No       Yes       No         Spot have a family history of blood clot diseases?       Yes       No       Subtotal:       Yes       No         bo you have a history of numexplained stilliborn Infant or a recurrent spontaneous abortion?       Yes       No       Subtotal:       TOTAL RISK FACTOR SCORE:       TOTAL RISK FACTOR SCORE:       Subtotal:         tave you have a history of numexplained stilliborn Infant or a recurrent spontaneous abortion?       Yes       No       Subtotal:       TOTAL RISK FACTOR SCORE:       Subtotal:       TOTAL RISK FACTOR SCORE:       Subtotal:       Subtotal:       TOTAL RISK factor Risk       Subtotal:       TOTAL RISK Factor Risk       Subtotal:       TOTAL RISK Factor Risk       Subtotal:       Subtotal:       TOTAL Risk Factor Risk       Subtotal:       To	Ilstory of Congestive Heart Fallure (CHF) Ilstory of Lung Disease (COPD/Emphysema) including less than 1 month ago Did you have a major infection/sepsis less than one mo- re you currently on bed rest or restricted mobility? Do you use Birth Control Pilis (BCP) or Hormone Rep- are you pregnant or have you had a baby within the last Do you have a history of an unexplained stillborn infar spontaneous abortion? Each Risk Factor Represents 5 Recent elective total hip or knee replacement surgery tave you had a broken hip, leg or pelvis within last month car accident) Stroke/CVA within the last month Patient may not be Patient may not be Patients Total Risk Risk Level Incidence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%	Yes No	Each Risk Factor Represents 3 Points
Itistory of Lung Diseases (COPD/Emptysems) including pneumonia       Do you have a history of blood clots including previous DVT or PE?       Yes       No         Iess than 1 month ago       Yes       No         Iess than 1 month ago       Yes       No         Idy you have a major infection/sepais less than one month ago?       Yes       No         to you have a major infection/sepais less than one month ago?       Yes       No         to you have a family history of blood clots including previous DVT or PE?       Yes       No         to you have a family history of blood clots including previous DVT or PE?       Yes       No         to you have a family history of blood clots including previous DVT or PE?       Yes       No         to you have a family history of blood clots including previous DVT or PE?       Yes       No         to you have a family history of blood clots including previous DVT or PE?       Yes       No         to you have a family history of blood clots including previous DVT or PE?       Yes       No         to you have a family history of blood clots including previous DVT or PE?       Yes       No         to you have a family history of blood clots including previous DVT or PE?       Yes       No         to you have a family history of blood clots including previous DVT or PE?       Yes       No         to you have a family history of blood clo	Ilstory of Lung Disease (COPD/Emphysema) including less than 1 month ago Did you have a major infection/sepsis less than one mu- re you currently on bed rest or restricted mobility? Do you use Birth Control Pills (BCP) or Hormone Rep are you pregnant or have you had a baby within the lat Do you have a history of an unexplained stilliborn infar spontaneous abortion?		
less than 1 month ago       Yes       No         jid you have a major infection/sepsis less than one month ago?       Yes       No         you use major infection/sepsis less than one month ago?       Yes       No         you use major infection/sepsis less than one month ago?       Yes       No         you use Bitch Control Pills (BCP) or Hormone Replacement Therapy (HRTY)       Yes       No         you use Bitch Control Pills (BCP) or Hormone Replacement Therapy (HRTY)       Yes       No         you use Bitch Control Pills (BCP) or Hormone Replacement Therapy (HRTY)       Yes       No         you use Bitch Control Pills (BCP) or Hormone Replacement Therapy (HRTY)       Yes       No         you have a family history of blood clot diseases?       Yes       No         you have a bistory of an unexplained stillborn infant or a recurrent       Yes       No         you have a bistory of runnew within the last month?       Yes       No         you have a bistory of trauma within the last month?       Yes       No         you have a bistory of trauma within the last month?       Yes       No         you have a bistory of trauma within the last month?       Yes       No         you have a bistory of trauma within the last month?       Yes       No         you have a bistory of trauma within the last month?       Yes	less than 1 month ago Did you have a major infection/sepsis less than one maine you currently on bed rest or restricted mobility? Do you use Birth Control Pilis (BCP) or Hormone Replane you pregnant or have you had a baby within the last bo you have a history of an unexplained stillborn infar spontaneous abortion?  Each Risk Factor Represents 5 Recent elective total hip or knee replacement surgery lave you had a broken hip, leg or pelvis within last moth car accident) itroke/CVA within the last month  Active Bleed, ingestion of Oral Anticoage  Total Risk Risk Level Incidence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%		
bid you have a major Infection/sepsis less than one month ago?       Yes       No         ve you currently on bad reat or restricted mobility?       Yes       No         o you use offit Control Pills (BCP) or Hormone Replacement Therapy (HRTY)       Yes       No         you have a history of an unexplained stillborn infant or a recurrent spontaneous abortion?       Yes       No         ou put ave a history of an unexplained stillborn infant or a recurrent spontaneous abortion?       Yes       No         ou put ave a history of numexplained stillborn infant or a recurrent spontaneous abortion?       Yes       No         ou put ave a history of numexplained stillborn infant or a recurrent spontaneous abortion?       Yes       No         ou put ave a history of numexplained stillborn infant or a recurrent spontaneous abortion?       Yes       No         ob you have a history of numexplained stillborn infant or a recurrent spontaneous abortion?       Yes       No         ob you have a history of numexplained stillborn infant or a recurrent spontaneous abortion?       Yes       No         ob you have a history of numexplained stillborn infant or a recurrent spontaneous abortion?       Yes       No         stave you had a broken hip, leg or paivis within last month?       Yes       No         stroke/CVA within the last month?       Yes       No         Subtotal:       Yes       No	Did you have a major infection/sepsis less than one matre you currently on bed reat or restricted mobility?         Do you use Birth Control Pills (BCP) or Hormone Reporter you pregnant or have you had a baby within the last boyou have a history of an unexplained stilliborn infair spontaneous abortion?         Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery lave you had a broken hip, leg or peivis within last moth car accident)         Stroke/CVA within the last month         Patient may n         Active Bleed, ingestion of Oral Anticoag         UNINCEL CONSID         Patient may n         Active Bleed, ingestion of Oral Anticoag         DVT         O-1         Low Risk       2%         2         Moderate Risk       10-20%         3-4		
We you currently on bed rest or restricted mobility?       Yes       No         Do you use Birth Control Pilis (BCP) or Hormone Replacement Therapy (HRTY?)       Yes       No         Yes you pregnant or have you had a baby within the last month?       Yes       No         Spontaneous abortion?       Yes       No         Subtotal:       Subtotal:       Do you have a family history of blood clot diseases?       Yes         Spontaneous abortion?       Yes       No         Stave you had a broken hip, leg or pelviswithin last month?       Yes       No         Stroke/CVA within the last month?       Yes       No	Are you currently on bed rest or restricted mobility? Do you use Birth Control Pilis (BCP) or Hormone Rep Are you pregnant or have you had a baby within the last Do you have a history of an unexplained stillborn infar spontaneous abortion? Each Risk Factor Represents 9 Recent elective total hip or knee replacement surgery Have you had a broken hip, leg or pelvis within last month car accident) Stroke/CVA within the last month Active Bleed, ingestion of Oral Anticoag CLINICAL CONSID Patient may not be a Patients Total Risk Risk Level Incidence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%		
Do you use Birth Control Pillis (BCP) or Hormone Replacement Therapy (HRTY)       Yes       No         Yes you pregnant or have you had a baby within the iast month?       Yes       No         Do you have a history of an unexplained stilliborn infant or a recurrent spontaneous abortion?       Yes       No         Subtotal:       Subtotal:       Yes       No         Subtotal:       Subtotal:       Subtotal:       TOTAL RISK FACTOR SCORE:         Each Risk Factor Represents S Points       Subtotal:       Subtotal:       TOTAL RISK FACTOR SCORE:         Stoke/CVA within the last month?       Yes       No       Yes       No         Do you have a history of trauma within the last month?       Yes       No       Yes       No         Stoke/CVA within the last month?       Yes       No       Yes       No         Stoke/CVA within the last month?       Yes       No       Yes       No         Stoke/CVA within the last month?       Yes       No       Subtotal:       Yes       No         Stoke/CVA within the last month?       Yes       No       Subtotal:       Yes       No         Stoke/CVA within the last month?       Yes       No       No       Subtotal:       No         Stoke/CVA within the last month?       Yes       No <td< td=""><td>Are you pregnant or have you had a baby within the late Do you have a history of an unexplained stilliborn infar spontaneous abortion? Each Risk Factor Represents 5 Recent elective total hip or knee replacement surgery lave you had a broken hip, leg or pelvis within last mo Do you have a history of trauma within the last month car accident) Stroke/CVA within the last month Active Bleed, ingestion of Oral Anticoag CLINICAL CONSID Patient may not be Patients Total Risk Risk Level Incidence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%</td><td></td><td></td></td<>	Are you pregnant or have you had a baby within the late Do you have a history of an unexplained stilliborn infar spontaneous abortion? Each Risk Factor Represents 5 Recent elective total hip or knee replacement surgery lave you had a broken hip, leg or pelvis within last mo Do you have a history of trauma within the last month car accident) Stroke/CVA within the last month Active Bleed, ingestion of Oral Anticoag CLINICAL CONSID Patient may not be Patients Total Risk Risk Level Incidence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%		
Are you pregnant or have you had a baby within the last month?       Yes       No         Do you have a history of an unexplained stilliborn infant or a recurrent spontaneous abortion?       Yes       No         Spontaneous abortion?       Ves       No         Each Risk Factor Represents 5 Points         Recent elective total hip or knee replacement surgery       Yes       No         you have a history of trauma within the last month?       Yes       No         Stroke/CVA within the last month?       Yes       No         Patient may not be a candidate for Scougula	Do you have a history of an unexplained stillborn infar spontaneous abortion?         Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery dave you had a broken hip, leg or pelvis within last moth car accident)         Do you have a history of trauma within the last month car accident)         Stroke/CVA within the last month         Patient may in Active Bleed, ingestion of Oral Anticoag CLINICAL CONSID         Patient may not be a Patients         Total Risk       Risk Level         Incidence of Factor Score       DVT         0-1       Low Risk       2%         2       Moderate Risk       10-20%         3-4       Higher Risk       20-40%	acement Therapy (HRT)?	
Do you have a history of an unexplained stillioom infant or a recurrent spontaneous abortion?       Yes No outbotal:         Yes No outbotal:       Yes No outbotal:         Secent elective total hip or knee replacement surgery Yet No bo you have a history of trauma within the last month? Yes No bo you have a history of trauma within the last month? Yes No subtotal:       Yes No outbot at most of trauma within the last month? Yes No bo you have a history of trauma within the last month? Yes No bo you have a history of trauma within the last month? Yes No bo you have a history of trauma within the last month? Yes No Subtotal:         Patient may not be a candidate for anticoagulant therapy & SCDs should be considered.         Active Bleed, ingestion of Oral Anticoagulants, Administration of glycoprotein libilia inhibitors, History of heparin induced thrombocytopenia         CLINICAL CONSIDERATIONS FOR THE USE OF SEQUENTIAL COMPRESSION DEVICES (SCD)         Patient may not be a candidate for SCDs & alternative prophylactic measures should be considered.         Active Bleed, ingestion of Oral Anticoagulants, Administration of glycoprotein libilia inhibitors, History of heparin induced thrombocytopenia         CLINICAL CONSIDERATIONS FOR THE USE OF SEQUENTIAL COMPRESSION DEVICES (SCD)         Patient may not be a candidate for SCDs & alternative prophylactic measures should be considered.         Active Bleed, ingestion of Oral Anticoagulant therapy & SCDs should be considered.         Patient may not be a candidate for SCDs & alternative prophylactic measures should be considered.         Patient may not be a candidate for SCDs & alternative prophylac	Do you have a history of an unexplained stillborn infar spontaneous abortion?           Each Risk Factor Represents S           Recent elective total hip or knee replacement surgery lave you had a broken hip, leg or pelvis within last motion on you have a history of trauma within the last month car accident)           Stroke/CVA within the last month           Patient may in Active Bleed, ingestion of Oral Anticoag CLINICAL CONSIDI Patient may not be reatients           Total Risk         Risk Level         Incidence of Portion Score           DVT         D-1         Low Risk         2%           2         Moderate Risk         10-20%           3-4         Higher Risk         20-40%		
spontaneous abortion?       Yes       No         subtotal:       oubtotal:       No         Secent elective total hip or knee replacement surgery       Yet       No         fave you had a broken hip, leg or peivis within last month?       Yet       No         ob you have a history of trauma within the last month?       Yet       No         Stroke/CVA within the last month?       Yets       No         Stroke/CVA within the last month?       Stroke for anticoagulant, Administration of glycoprotein lib/lilla inhibitors, History of heparin induced thrombocytopenia	Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery         Have you had a broken hip, leg or pelvis within last month         Co you have a history of trauma within the last month         car accident)         Stroke/CVA within the last month         Active Bleed, ingestion of Oral Anticoag         CLINICAL CONSIDI         Patient may not be         Patient may		
subtotal:         Subtotal: <td< td=""><td>Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery         Have you had a broken hip, leg or pelvis within last motoo         Do you have a history of trauma within the last month         Car accident)         Stroke/CVA within the last month         Patient may in         Active Bleed, ingestion of Oral Anticoag         CLINICAL CONSIDI         Patient may not be         Patients         Total Risk       Risk Level         Incidence of         Factor Score       DVT         0-1       Low Risk       2%         2       Moderate Risk       10-20%         3-4       Higher Risk       20-40%</td><td></td><td>TOTAL RISK FACTOR SCORE:</td></td<>	Each Risk Factor Represents 5         Recent elective total hip or knee replacement surgery         Have you had a broken hip, leg or pelvis within last motoo         Do you have a history of trauma within the last month         Car accident)         Stroke/CVA within the last month         Patient may in         Active Bleed, ingestion of Oral Anticoag         CLINICAL CONSIDI         Patient may not be         Patients         Total Risk       Risk Level         Incidence of         Factor Score       DVT         0-1       Low Risk       2%         2       Moderate Risk       10-20%         3-4       Higher Risk       20-40%		TOTAL RISK FACTOR SCORE:
Each Risk Factor Represents 5 Points         Recent elective total hip or knee replacement surgery       Yet       No         fave you had a broken hip, leg or pelvis within last month?       Yet       No         by out have a history of trauma within the last month? (fail, broken bone, car accident)       Yes       No         stroke/CVA within the last month       Yes	Recent elective total hip or knee replacement surgery lave you had a broken hip, leg or peivis within last mo bo you have a history of trauma within the last month car accident) stroke/CVA within the last month Active Bleed, ingestion of Oral Anticoag CLINICAL CONSID Patient may no bo Patients Total Risk Risk Level Incidence of Factor Score DVT 0-1 Low Risk 2% 2 Moderate Risk 10-20% 3-4 Higher Risk 20-40%	Yes No	
Patient may not be a candidate for anticoagulant therapy & SCDs should be considered.         Active Bieed, Ingestion of Oral Anticoagulants, Administration of glycoprotein lib/lila inhibitors, History of heparin induced thrombocytopenia         CLINICAL CONSIDERATIONS FOR THE USE OF SEQUENTIAL COMPRESSION DEVICES (SCD)         Patient may not be a candidate for SCDs & alternative prophylactic measures should be considered.         Patient may not be a candidate for SCDs & alternative prophylactic measures should be considered.         Patients with Severe Peripheral Arterial Disease, CHF, Acute Superficial DVT         Total Risk       Risk Level       Incidence of DVT       Prophylaxis Regimen         0-1       Low Risk       2%       Early ambulation         2       Moderate Risk       10-20%       Please review with surgical staff.         3-4       Higher Risk       20-40%       Please review with surgical staff.	Active Bleed, Ingestion of Oral Anticoag       CLINICAL CONSIDI       Patient may not be a       Patient may not be a       Patients       Total Risk     Risk Level       Incidence of       Factor Score     DVT       0-1     Low Risk     2%       2     Moderate Risk     10-20%       3-4     Higher Risk     20-40%	nth? Ye⊧ No ? (fall, broken bone, Yes No Yes – No	
Patient may not be a candidate for SCDs & alternative prophylactic measures should be considered. Patients with Severe Peripheral Arterial Disease, CHF, Acute Superficial DVT       Total Risk     Risk Level     Incidence of DVT     Prophylaxis Regimen       0-1     Low Risk     2%     Early ambulation       2     Moderate Risk     10-20%     Please review with surgical staff.       3-4     Higher Risk     20-40%     Please review with surgical staff.	Patient may not be Patients       Total Risk     Risk Level     Incidence of       Factor Score     DVT       0-1     Low Risk     2%       2     Moderate Risk     10-20%       3-4     Higher Risk     20-40%	ot be a candidate for anticoaguiants, Administration of give	gulant therapy & SCDs should be considered. coprotein IIb/IIIa inhibitors, History of heparin induced thrombocytopenia
Total Risk     Risk Level     incidence of DVT     Prophylaxis Regimen       Factor Score     DVT     Early ambulation       0-1     Low Risk     2%     Early ambulation       2     Moderate Risk     10-20%     Please review with surgical staff.       3-4     Higher Risk     20-40%     Please review with surgical staff.	Total Risk     Risk Level     Incidence of       Factor Score     DVT       0-1     Low Risk     2%       2     Moderate Risk     10-20%       3-4     Higher Risk     20-40%	candidate for SCDs & altern	native prophylactic measures should be considered.
Factor Score     DVT       0-1     Low Risk     2%     Early ambulation       2     Moderate Risk     10-20%     Please review with surgical staff.       3-4     Higher Risk     20-40%     Please review with surgical staff.	0-1         Low Risk         2%           2         Moderate Risk         10-20%           3-4         Higher Risk         20-40%	1	
2     Moderate Risk     10-20%     Please review with surgical staff.       3-4     Higher Risk     20-40%     Please review with surgical staff.	2         Moderate Risk         10-20%           3-4         Higher Risk         20-40%		Prophylaxis Kegimen
3-4 Higher Risk 20-40% Please review with surgical staff.	3-4 Higher Risk 20-40%	Early ambulation	
3-4     Higher Risk     20-40%     Please review with surgical staff.	3-4 Higher Risk 20-40%	Please review with surgica	il staff.
		Please review with surgical	i staff.
	5 or more Hignest Risk 40-80%		i staff.
		Please review with surgical	

Updated Date:10/25/2013 08:49:49

ADDITIONAL RESOURCE -

A pamphlet for providers titled, "Patient Safety Toolkit: Ambulatory Surgery and VTE," is available on line from the AAAHC Institute for Quality Improvement. It could be helpful in training efforts. <u>http://www.aaahc.org/Global/pdfs/AAAHC%</u> 20Institute%20content/Patient%20Safety%20Toolkits/PST\_VTE\_FINAL.pdf



## THE USE OF A RED DOT SYSTEM TO IDENTIFY PATIENTS ON ANTICOAGULATION HAVING ENDOSCOPIC PROCEDURES

Maria Fahey, RN, MSN, Infection Control Preventionist Reliant Medical Group - New England SCOPE

# BACKGROUND

Postpolypectomy bleeding occurs in 1 to 6 per 1000 (0.1 - 0.6%) polypectomy procedures as demonstrated in various studies and clinical reports. The bleeding may occur immediately following a polypectomy or may be delayed for up to 29 days. The severity of bleeding can range from minor oozing to arterial pumping. The risks for post polypectomy bleeding are related to the type and size of the polyp, the technique of the polypectomy, and the coagulation status of the patient.<sup>1</sup> Anticoagulation is prescribed for a variety of reasons. Stopping the anticoagulation for an invasive procedure is dependent on many factors. If a decision is made to perform endoscopy in patients receiving anticoagulation, the need to stop or reverse these agents should be individualized. The risks of stopping anticoagulation must be considered, in balance with the risks of bleeding after invasive procedures.<sup>2</sup> Although bleeding can be controlled endoscopically in the majority of patients, studies are suggesting that bleeding is less of a problem when small polyps are removed. Bleeding is more common after removal of large polyps with a thick stalk, and sessile polyps.<sup>3</sup>

The physicians at New England SCOPE utilize the risk stratification, as listed by the American Society for Gastrointestinal Endoscopy guidelines. Procedures classified as high risk for hemorrhage include colonoscopic polypectomy, endoscopic dilatation of strictures in the upper or lower GI tract, and endoscopic therapy of varices. Procedures classified as low risk include diagnostic procedures, with or without biopsy.<sup>4</sup>

#### **ANTICOAGULATED PATIENT COMORBIDITIES**

Anticoagulants are prescribed for low-risk conditions, including uncomplicated or paroxysmal nonvalvular atrial fibrillation, bioprosthetic valve, mechanical valve in the aortic position, and deep vein thrombosis; and higher risk conditions, including atrial fibrillation associated with valvular disease, prosthetic valves, and mechanical valves in the mitral position.<sup>5</sup>

#### LIMITATIONS DUE TO ANTICOAGULATION

If a patient receiving anticoagulation therapy has an INR, above the recommended therapeutic level, the physician may elect to postpone the procedure. If the procedure is performed, the physician may refrain from taking any tissue samples to avoid the risk of excessive bleeding. Any significant active cardiopulmonary issues may necessitate cancellation.<sup>6</sup>

#### **INFORMED CONSENT**

At the time of the consent for the procedure, the patient is informed that small polyps may be removed and tissue samples obtained. The physician instructs the patient that higher risk procedures, such as removal of large polyps or endoscopic dilatation of strictures will not be performed when the patient is anticoagulated. To perform the higher risk procedures, a discussion among the patient, GI physician, primary care provider, and/or cardiologist must take place to determine if holding the anticoagulation for 4 or 5 days pre-procedure is safe. This decision must be made on an individual basis, dependent on each patient's diagnosis and comorbidities, and in consultation with the patient's prescribing physician.

#### NEW ENGLAND SCOPE INITIATIVE TO IDENTIFY PATIENTS ON ANTICOAGULATION

New England Scope's PCA (Patient Care Assessment) Committee recognized the importance of improving their processes for identifying patients on anticoagulation. An improved method of identifying anticoagulated patients would avoid inadvertent removal of large polyps and decrease the potential risk. A final resolution was agreed upon, which included the adoption of a "red dot" system. When a patient is identified during the admission process as being on anticoagulation therapy, the admitting nurse is responsible for placing a red dot on the flow sheet, medication reconciliation sheet, sticker sheet and manila folder housing the medical record. The presence of a red dot alerts all caregivers that the patient is currently taking anticoagulant therapy.



(Continued from page 3)

This "red dot" safety initiative was implemented in 2013. The process included education of all staff regarding the "red dot" system, as well as how its use would help in identifying all patients that are currently taking anticoagulant therapy. The initiative also included the surveillance of 20 patient medical records on a monthly basis. For a period of three months, the medical records were examined to determine the appropriate use of the "red dot" system. The information was documented on the staff peer reviews and was reported at monthly staff meetings. A policy and procedure was written and implemented to support this safety initiative. Corrective action plans will be performed as necessary to ensure that the policy is continued and carried out by each member of the team.

#### **RETROSPECTIVE AUDIT**

An audit was done for the charts of May and June of 2013 to determine the percentage of patients using anticoagulation and to determine how many of those patients had tissue samples taken. During the month of May, of the 911 patients seen, 33 were on anticoagulation medication (3.6%). Specimens were taken on 18 of the 33 anticoagulated patients (54%). There were no inadvertent snare polypectomies. During the month of June, of 826 patients seen, 36 were on anticoagulation medicine, (4.3%). Specimens were taken on 18 of the 36 (50%) anticoagulated patients. There were no inadvertent snare polypectomies.

# CONCLUSION

Our audit confirmed that no inadvertent snare polypectomies were performed since implementation of the Red Dot System, a finding that we attribute to its success.

## REFERENCES

- 1) ASGE Guideline, Complications of Colonoscopy, Gastrointestinal Endoscopy. Volume 74, No. 4: 2011. Pg. 745-747.
- 2) ASGE Guideline, *Management of Antithrombotic Agents for Endoscopic Procedures*. Gastrointestinal Endoscopy, Volume 70, No. 6: 2009. Pg.1060- 1062.
- 3) ASGE Guideline (Colonoscopy), op. cit., Pg. 746.
- 4) Vietch, AM, Baglin, TP, Gershlick, AH, Harnden, SM, Tighe, R, and Cairns, S. Guidelines for the management of anticoagulant and antiplatelet therapy in patients undergoing endoscopic procedures. Gut 2008; 57:1322-1329.
- 5) ASGE Guideline, (Antithrombotic Agents), op. cit., Pg.1061.
- 6) ASGE Guideline, (Antithrombotic Agents), op. cit., Pg.1062.

#### ASC SAFETY AND QUALITY REVIEWS "LESSONS LEARNED"

- Pulmonary embolism events were noted in the week following procedures. Related factors included: Age < 40, male sex, elevated BMI, anticoagulant medication noncompliance, and immobility.
- Return to surgery for wound bleed revealed anticoagulant bridge therapy had not been included in H&P information.
- Splenic injuries were noted during colonoscopies with polypectomies in the splenic flexure.
- Please review your policies for patient risk assessment, preoperative evaluations, discharge processes, and post discharge follow-up and reporting requirements, to confirm that they are consistent with evidence-based standards, and that you have mechanisms to ensure that these policies are routinely followed by all staff.
- When including information about credentialed providers in your SQR, please refer to the QPSD Guidelines for Collection, Analysis and Reporting of Performance Data. Submission of this information should evidence a review of the provider's involvement in a case. The guidelines are available in the QPS section of the Board's website: http:// www.mass.gov/eohhs/docs/borim/physicians/pca-notifications/perform-data-guideline-may-2010.pdf.

# MANAGING ADVANCED DIRECTIVES IN THE AMBULATORY SURGICAL SETTING

Amy Rice RN, BSN, PCA Coordinator Valley Medical Group Ambulatory Surgery & Procedure Center

Valley Medical Group's Ambulatory Surgical Center is located in Western Massachusetts and performs an average of 2400 Endoscopy procedures annually. During our Accreditation Association for Ambulatory Health Care (AAAHC) recertification in January 2013, the on-site reviewer pointed out that our protocols and consent forms did not include any language to address active Advanced Directives. Quite honestly, we hadn't thought of this scenario. The previous assumptions were that only patients at end of life had Advanced Directives. Given that assumption, why would someone with an active DNR order be seeking an endoscopic procedure? The reality is that older and sicker patients are having such procedures done, and more patients (both young and old) are making their wishes known well before end of life. We also took this opportunity to look at current practice and regulations in Massachusetts in regard to Advanced Directives. We found that some things had changed – including the transition from DNR orders to Medical Orders for Life Sustaining Therapy (MOLST).

The first step we took was to look at what our existing policies and procedures covered, including our consent forms. After review and research the policies and consent forms were revised to meet current standards. On the advice of our legal counsel, we added a clause in the Advanced Directive policy that we would not only screen all patients for Advanced Directives, but also screen for active DNR/MOLST orders. If a patient is found to have an active DNR/MOLST order, the patient will be asked whether the DNR order can be suspended during the procedure and the immediate post-procedure recovery period (while the patient is under care at our facility). We added this statement into all of our treatment consent forms. If the patient is unwilling to suspend the DNR/MOLST order during the procedure and immediate recovery period, the physician will assist the patient in making arrangements to have the procedure performed at another facility.

Once we had our policy and consent forms updated, the entire process was reviewed with the staff and physicians. The responsibility of discussing Advanced Directives starts with the physicians and mid-level providers at the pre-procedure office visit. The physician discusses Advanced Directives with the patient again on the date of procedure while completing consent for the procedure.

To date we have not had any patients who have alerted us to an active DNR/MOLST order that would need consent to be suspended during their endoscopy procedure. We are now prepared to manage a patient with an active DNR/MOLST order should this situation present itself in the future.

#### **QPSD COMMENT**

The expectation is that the average ASC patient has few co- morbidities and little chance of an adverse event, but unanticipated events do occur and can result in the need for lifesaving interventions. We would be interested in having other ASCs share their experiences in developing processes for managing Advanced Directives and DNR/MOLST orders.

More information on this topic is available from the following sources:

- Massachusetts Medical Orders for Life Sustaining Treatment. http://www.molst-ma.org/
- Massachusetts General Laws CHAPTER 201D, Section 14. Health Care Proxies. https://malegislature.gov/Laws/GeneralLaws/PartII/ TitleII/Chapter201D.
- Federal Regulations. 42 CFR 489.100,102. Advanced Directives. http://www.gpo.gov/fdsys/pkg/CFR-2007-title42-vol4/pdf/CFR-2007-title42-vol4-sec489-102.pdf
- Massachusetts Medical Society. Health Care Proxies and End of Life Care. http://www.massmed.org/Patient-Care/Health-Topics/ Health-Care-Proxies-and-End-of-Life-Care/Health-Care-Proxies-and-End-of-Life-Care/
- American College of Surgeons. Statement on Advance Directives by Patients: "Do Not Resuscitate" in the Operating Room. www.facs.org/fellows\_info/statements/st-19.html
- Pennsylvania Patient Safety Authority. Advisory. Understanding Living Wills and DNR Orders. http://patientsafetyauthority.org/ ADVISORIES/AdvisoryLibrary/2008/Dec5(4)/Pages/111.aspx





# **FIRST**

## **DIABETES MANAGEMENT**

Mary Jane Botelho, RN, BSN Clinical Director/PCA Coordinator Advanced Eye Surgery Center

Managing diabetic patients at an Ambulatory Surgery Center (ASC) can be a challenge. The staff at our ASC has had many discussions regarding proper management of the diabetic patient. Team members had discussed a variety of issues related to care, including: the parameters for reporting blood sugar levels; who to notify regarding an abnormal level; and whether the primary care physician should be notified, in addition to the surgeon and anesthesia staff. The need for clarification prompted our ASC to design a quality improvement study that would guide us in establishing a protocol for management of our diabetic patients.

Our study was limited to patients receiving insulin and oral glycemic medications. Diet controlled patients and all diabetics who were having YAG laser procedures and not required to be NPO, were exempt from the study. We looked at: when and under what circumstances blood sugars were drawn; how and to whom the results were communicated; and how patients with abnormal blood sugars were managed. The findings helped to re-define our ASC's diabetes management policies and procedures.

The review showed that there was inconsistency among staff in the manner in which they reported results. For example, sometimes the abnormal results were reported to the surgeon, while at other times the results were reported to the CRNA. It was also noted that there was never a time during the study when a result was reported to the primary care physician. The actual results did not play a role in how the staff would report the blood sugar readings.

The findings prompted our ASC to develop a set of procedures to enhance patient safety. The goal was focused on achieving the lowest glycemic level that is safest in terms of hypoglycemic risk for each patient, and to ensure a consistent approach for all the team members in following the process for reporting abnormal blood sugar results.

The following protocols were implemented as a result of our findings:

- All fasting blood glucose results on all oral and insulin dependent diabetics will be performed in the Pre-Op area. These results will be recorded in a log book and in the electronic medical record.
- All insulin dependent diabetics and any other patient who warrants a repeat in a fasting blood sugar will have an additional blood glucose level performed before having a snack in the PACU area.
- All blood glucose values less than 70mg/dl or greater than 250mg/dl will be reported to the surgeon and CRNA. Values greater than 350mg/dl will be reported to the surgeon, CRNA, and the primary care physician. The patient will then be further assessed and a treatment plan, if any, will be ordered.
- Glucose levels will be re-assessed on any patient requiring treatment for hypo/hyperglycemia. If necessary, further testing may be required depending upon a patient's signs and symptoms, as well as the possibility of further treatment.
- Interview/assess the patient for further signs and symptoms of hypo/hyperglycemia. Report the assessment findings to the surgeon and CRNA.
- If applicable, and if the patient has his/her own insulin, the staff will obtain orders from the surgeon, advising the
  patient to independently administer his/her own insulin. The RN will supervise the patient technique to assure
  proper administration of the insulin. The RN will NOT administer the insulin UNLESS the insulin is ordered by the
  surgeon and the insulin is in its original container and properly labeled. Insulin orders will be at the surgeon's direction depending upon the individual's signs and symptoms of hyperglycemia. No orders will be obtained from
  the primary care physician due to the impracticality of having those orders signed in a timely manner. The RN may
  obtain a verbal recommendation from the primary care physician. The RN will then inform the surgeon regarding
  the primary care physician's recommendations. However, the surgeon is ultimately responsible for giving all insulin orders at the ASC.

The implementation of this policy has improved the quality of care that our diabetic patients receive. Our ASC is now utilizing a standard protocol for all diabetic patients, which includes guidance on the management of those patients with hypo/ hyperglycemia. This policy has clarified the many questions that the staff once had relating to the proper management of diabetic patients.



# **QPSD COMMITTEE MEMBERS**

Candace Lapidus Sloane, MD (Chair) Susan Haas, MD (Vice Chair) Nicolas Argy, MD, JD Janet Barnes, RN, JD James Bono, MD Kimberly Eisenstock, MD Diane Hanley, RN, MS Mark Hershey, MD Pardon R. Kenney, MD Marc Rubin, MD Arthur Russo, MD Robert Schreiber, MD

## **REMINDERS:**

- The Annual and Semi Annual Reports were due March 30th.
- We rely on your contact information. By regulation, QPSD must be notified of any changes to contact information for PCA Coordinators within 10 days. The contact form is available online for fax submission. http://www.mass.gov/ eohhs/docs/borim/physicians/asc-contact-form.doc.

# **CONTACT THE QPSD**

To be added to the QPSD Newsletter and advisory mailing list, update facility contact information, submit an article, request an SQR form, or obtain additional information, contact QPSD: Jennifer.Sadowski@state.ma.us or (781) 876-8296.

Send mail to Massachusetts Board of Registration in Medicine, QPS Division, 200 Harvard Mill Square, Suite 330, Wakefield, MA 01880.



The QPSD Newsletter, FIRST Do No Harm, is a vehicle for sharing quality and patient safety initiatives of Massachusetts healthcare facilities and the work of the Board's Quality and Patient Safety Division and Committee. Publication of this Newsletter does not constitute an endorsement by the Board of any studies or practices described in the Newsletter and none should be inferred.