

ECONOMIC ANALYSIS
Anticoagulant Thromboprophylaxis in the ICU

Objective:

To practice critical appraisal of an economic evaluation.

Assignment:

Read the economic analysis article by Fowler et al and decide how you would consider this evidence in your presentation to the Pharmacy and Therapeutics Committee.

Clinical Scenario:

You are representing acute care medicine on your hospital's Pharmacy and Therapeutics Committee. Your hospital has selected use of unfractionated heparin (UFH) for thromboprophylaxis for acutely ill medical and surgical patients in the ICU, while other populations such as orthopedic and trauma patients, receive low molecular weight heparin (LMWH). You have read the PROTECT trial, an international randomized blinded trial comparing the effectiveness of UFH and the LMWH dalteparin. PROTECT found no difference in the primary end point of leg deep-vein thrombosis but a reduced rate of pulmonary embolus and heparin-induced thrombocytopenia among critically ill medical-surgical patients who received dalteparin, and no difference in bleeding. On the grounds of the higher acquisition costs of LMWH, your Pharmacy and Therapeutics Committee has retained formulary approval for UFH. You recall hearing about the PROTECT Economic Evaluation to evaluate the comparative cost-effectiveness of LMWH vs UFH for VTE prophylaxis in critically ill patients. You download it and begin to critically appraise to prepare for next week's Pharmacy and Therapeutics Committee meeting.

Enclosed Materials:

1. Fowler RA, Mittmann N, Geerts W, Heels-Ansdell D, Gould MK, Guyatt GH, Krahn M, Finfer S, Chan B, Ormanidhi O, Arabi Y, Qushmaq I, Rocha MG, Dodek P, McIntyre L, Hall R, Ferguson ND, Mehta S, Marshall JC, Doig CD, Muscedere J, Jacka MJ, Klinger J, Vlahakis N, Orford N, Seppelt I, Skrobik YK, Sud S, Cade J, Cooper DJ, Cook DJ for the E-PROTECT Investigators for the CCCTG and ANZICS-CTG. Cost-effectiveness of dalteparin versus unfractionated heparin for the prevention of venous thromboembolism in critically ill patients: a prospective comparative economic evaluation of the Prophylaxis for Thromboembolism in Critical Care Trial (PROTECT). *JAMA* 2014;312(20):2135-2145.
2. Guyatt G, Drummond R. *User's Guides to the Medical Literature: A Manual for Evidence Based Clinical Practice*, 3rd Edition (JAMA). New York, NY: The McGraw-Hill Companies, Inc, 2015. 28.2 Economic Analysis.
3. Worksheet for the evaluation of an article on unit title.

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Optional Readings:

4. Fowler RA, Mittmann N, Geerts W, Heels-Ansdell D, Gould MK, Guyatt GH, Krahn M, Finfer S, Pinto R, Chan B, Ormanidhi O, Arabi Y, Qushmaq I, Rocha MG, Dodek P, McIntyre LL, Hall R, Ferguson ND, Mehta S, Marshall JC, Doig CJ, Muscedere J, Jacka MJ, Klinger JR, Vlahakis N, Orford N, Seppelt I, Skrobik YK, Sud S, Cade JF, Cooper DJ, Cook DJ for the CCCTG. Prospective Economic Evaluation of the Prophylaxis for ThromboEmbolism in Critical Care Trial (E-PROTECT). *Trials* 2014;15:502.
5. Cook DJ, Meade M, Guyatt G, Walter SD, Heels-Ansdell D, Warkentin T, Zytaruk N, Crowther MA, Geerts W, Cooper DJ, Vallance S, Qushmaq I, Rocha M, Berwanger O, Vlahakis N (Writing Committee) for the PROTECT Investigators for the CCCTG & the ANZICS-CTG. A Randomized Trial of Dalteparin versus Unfractionated Heparin in Critically Ill Patients. *N Engl J Med* 2011;364(14):1305-1314.