Venous thromboembolism (VTE), including deep vein thrombosis and pulmonary embolism, are common problems experienced by patients with lung cancer that can impact treatment plans, prognoses, and survival. Patients with lung cancer are at greatest risk for development of VTE in the ambulatory care treatment setting. Literature does exist on VTE management for medical and surgical oncology inpatients, as well as clinical guidelines for inpatient prophylaxis; however, published evidence is lacking on outpatient risk and thromboprophylaxis in medical oncology outpatients, particularly patients with lung cancer. Because patients with lung cancer treated in the ambulatory setting have established risks for VTE, they may benefit from thromboprophylaxis. Clinical guidelines for outpatient thromboprophylaxis direct the clinical practice for thromboprophylaxis in lung cancer treatment. The purpose of the current article is to explore the VTE risks associated with ambulatory lung cancer treatment and to review the recommended guidelines for thromboprophylaxis to guide clinical decision making for patients with lung cancer.