

Deep Vein Thrombosis and Pulmonary Embolism

There are few public health problems as serious as deep vein thrombosis (DVT) and pulmonary embolism (PE), yet these conditions receive little attention. DVT/PE is an underdiagnosed, serious, preventable medical condition that occurs when a blood clot forms in a deep vein. These clots usually develop in the lower leg, thigh, or pelvis, but they can also occur in the arm. In more than one-third of people affected by DVT, clots can travel to the lungs and cause PE, a potentially fatal condition.

The precise number of people affected by DVT/PE is unknown, but estimates range from 300,000 to 600,000 annually in the United States. DVT/PE is associated with substantial morbidity and mortality: One-third of people with DVT/PE will have a recurrence within 10 years and one-third of people die within one month of diagnosis. Among people who have had a DVT, one-third will have long-term complications (post-thrombotic syndrome) such as swelling, pain, discoloration, and scaling in the affected limb. In some cases, the symptoms can be so severe that a person can become disabled. More troubling, sudden death is the first symptom in about one-quarter of people who have a PE.

Much of the morbidity and mortality associated with DVT/PE could be prevented with early and accurate diagnosis and management; however, the major challenges for preventing DVT/PE are effectively predicting which individuals are at greatest risk and ensuring access to appropriate care. DVT/PE affects people of all races and ages. Many of the acquired risks such as obesity, advanced age, air travel, chronic diseases, cancer, and hospitalization are increasing in the United States, and we can expect to see increasing numbers of people affected by DVT/PE.

A Public Health Approach

Surveillance, Epidemiology, Research

Despite the large number of people affected, there is currently no national surveillance of DVT/PE, and current prevalence and incidence estimates likely underestimate the impact of this condition. To strengthen our understanding of this condition and its impact, we need better data on DVT/PE incidence, morbidity, and mortality using surveillance that is geographically, racially, and ethnically representative of the U.S. population. In addition, data from such surveillance can also help to:

- Determine if differences in risks and outcomes exist among minority populations including whether DVT/PE contributes to health disparities.
- Define the risk factors in selected patient groups, such as women who are pregnant or individuals who have had surgical procedures.
- Evaluate the use of evidence-based preventive measures in clinical practice.
- Detect changes in DVT/PE occurrence over time.
- Identify areas for future research to reduce the disease burden.

The Centers for Disease Control and Prevention (CDC) is engaged in research to identify genetic and acquired risk factors of DVT/PE by providing support for the Genetic Attributes of Thrombosis Epidemiology (GATE) Study, a cooperative agreement with Emory University's Rollins School of Public Health. Researchers are using data from this study of more than 1,200 cases of DVT/PE in both African-Americans and whites to evaluate the effect of genetic variations on the risk of DVT/PE.



Every day reveals a more promising future.



National Center on Birth Defects and Developmental Disabilities

