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## Blood Clot Prevention Is Higher Priority at Hospitals

Many patients don't receive anticlotting drugs; nurses don't always give them



By

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Blood clots, which form when blood doesn't flow properly, can happen to anyone, including travelers on long plane rides in cramped seats, women on birth control drugs, or seemingly healthy people with no known risk factors.

Almost half of clots strike patients when they are in the hospital or soon after discharge, ranking them among the most common causes of preventable deaths. Guidelines for preventing clots are in place, yet studies show that 40% to 60% of patients who would benefit don't receive appropriate treatments. They aren't given anticlotting drugs because hospitals don't reliably administer them and patients sometimes refuse them.

Now, many hospitals are intensifying their clot-prevention as they incur more financial penalties in the form of reduced payments from federal and state health agencies if patients develop clots while under their care. Hospitals are using electronic medical records to more precisely identify patients' risk levels, holding refresher training sessions for nurses, and providing patients with educational materials on the dangers of blood clots.

Clots, known by the medical term venous thromboembolism, typically start in the deep veins of the leg or arm. Those clots are called deep vein thrombosis. When a part of the clot breaks off and travels to the lung, it can cause a pulmonary embolism, or blockage. There are about 900,000 cases of deep vein thrombosis in the U.S. each year, and about 30% will become pulmonary embolisms. Of those, about a third are fatal. Democratic presidential candidate Hillary Clinton takes a prescription blood-thinning drug as a result of suffering blood clots in

the past.

Normally, when the body is injured, blood clots form to seal small cuts or breaks on blood vessel walls and stop bleeding. But if the clotting process is altered or wrongly triggered, it can cause excessive clotting or prevent clots from dissolving properly. About a third of patients who suffer a clot are at risk for another.



The Johns Hopkins Hospital complex in Baltimore. The hospital launched a program to improve its blood clot prevention in 2005 and has studied its success in administering blood thinners to patients as well as patients' and nurses' attitudes toward the drugs. *PHOTO: PATRICK SEMANSKY/AP*

Hospitalized adults with pre-existing conditions such as arthritis, high blood pressure, cancer and kidney failure are about three times as likely to get a life-threatening blood clot than people without such conditions, according to a Centers for Disease Control and Prevention study published last month. The risk of getting a clot also rises with prolonged bed rest, which slows blood flow and causes blood to pool in the limbs. Surgical procedures also can injure veins and cause clots.

To prevent clotting, hospitals follow prevention guidelines typically requiring patients to get three shots daily of a blood thinner like heparin, usually with a small needle injected in the belly. The drug reduces or stops the ability of blood to coagulate into a clot, so doctors and nurses must monitor patients carefully for uncontrolled bleeding.

Hospitals also use so-called sequential compression devices, which gently squeeze the legs or feet, to keep blood moving along. Patients also wear compression stockings.

Patients should ask hospital staff: "What are you going to do to make sure I don't get a blood clot?" says Randy Fenninger, a blood clot survivor and chief executive of the nonprofit National Blood Clot Alliance, which provides patient information and a course in clot

prevention for nurses and other health care professionals on its website.

Not all clots are preventable. A study by Johns Hopkins Hospital published last week in *JAMA Surgery* found that even when hospitals use blood thinners optimally and follow other best practices, some patients will develop clots. The study found that 28% of about 128 clot cases reviewed weren't preventable because they were associated with catheters, which can block blood flow and cause inflammation, risks that can't be overcome with medications.

But more than half of patients who had preventable clots received "suboptimal" care, the study found. Of them, 27% weren't prescribed appropriate clot-preventing drugs and 73% missed at least one dose of prescribed medication. The study concluded that it would be better for regulators and insurers to track whether patients were correctly treated than to assign financial penalties based solely on the number of clots.

Efforts by Johns Hopkins over the last decade show how difficult it can be to improve clot prevention. After finding in 2005 that only 33% of patients received appropriate treatment, the hospital used its electronic order entry system to assess patient risk and guide doctors in prescribing drugs.

By 2011, 80% of surgical patients and 92% of medical patients had the appropriate prescription ordered for them. But the medications didn't always find their way to patients. Nurses didn't always administer the prescribed drugs, or give patients the entire course of medication, according to study author Elliott Haut, an associate professor of surgery at Johns Hopkins University School of Medicine. In a survey last year, published in the *Journal of Patient Safety*, nurses reported they believed they could judge whether patients needed the drugs, and reported not wanting to bother patients while sleeping. Nurses also told patients the drugs were optional, leading some to refuse them. Research has also shown that in two thirds of cases where the medications weren't given, it was because patients refused them.

"Everyone assumed that once we got doctors to order the right medications, the rest would magically fall into place," says Dr. Haut. "It turns out that was very naive thinking. The nurse administration and patient acceptance phases are just as critical."

Dr. Haut is now leading a new project funded by the nonprofit Patient-Centered Outcomes Research Institute that includes training sessions for nurses about improving communication with patients and a special admission package for patients about taking an active role in clot prevention. Hopkins turned to some patients who have suffered blood clots to review the materials, talk to nurses, and tell their own

stories in a video to convey the dangers of clots.



Paul Zaruba with his dog Baxter. The 46-year-old had numerous blood clots in his lungs and now takes blood thinners to prevent more clots. *PHOTO: PAUL ZARUBA*

One of them was Paul Zaruba, a 46-year-old director of operations for an engineering firm from Catonsville, Md. Feeling unusually winded over several weeks in 2012, he became so severely short of breath one day that he went to a local emergency room at the urging of his mother-in-law, a nurse. There, after running a few tests, doctors determined he had numerous clots in both lungs, with no known cause. He spent four days in the hospital and is now on a regular regimen of blood thinners to prevent a recurrence. “I was moments away from collapsing and dying suddenly,” says Mr. Zaruba.

David Chidester, a 70-year-old retired production electrician who was hospitalized at Hopkins last week for respiratory issues related to a previous lung transplant, says he was under the impression that as long as he was able to get out of bed and walk that he wasn’t at risk for a clot and didn’t need to take a blood-thinning drug. He initially refused heparin, and an electronic alert went out to Dauryne Shaffer, a nurse and lead educator for the project at Hopkins. She went to see him in his hospital room.

She tells patients the pain of a clot is far worse than the burning sensation that heparin can cause. “I’m not going to bully you into taking the drugs, but I am going to give you the information you need to make an educated decision,” she says. If they still refuse, doctors will step in to discuss alternatives.

“I told her she was stalking me,” says Mr. Chidester. But in the end, he agreed to take his heparin shots, three times a day. “I chose to go ahead,” he says. “It’s a good precaution.”

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