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# Long-Term Care Survey Alert

## Medication Management: Keep Your Coumadin Patients In The Safety Zone

**Learn the in's and out's to managing this lifesaving but dangerous drug.**

If you don't follow the right lab and clinical monitoring protocols, residents on the blood thinner Coumadin could be a medical emergency -- and survey disaster -- waiting to happen.

And you have to do more than just eyeball residents' INRs (International Normalized Ratios) to see if they are in the therapeutic range for anticoagulation. "The medical director should review INR levels using a tracking sheet that allows him to see the trend in INRs over time," emphasizes **Scott Rifkin, MD**, with **Rifkin Medical Services** in Owings Mills, MD.

**Cautionary tale:** Rifkin recalls one patient who had an INR of 1.5 (normal values range between 2 and 3). So the doctor bumped up the patient's Coumadin dose and rechecked his INR in a week, which was still therapeutic at 2.8. But then the physician made a fatal mistake: He ordered the next INR in a month even though the trend showed a steep INR climb from 1.5 to 2.8 in a week. "A week later, the patient had some gum bleeding and bruising on her hip but no one put two and two together," Rifkin notes.

The patient bled to death two-and-a-half weeks after the increased dosage, he reports.

**Lesson learned:** In Rifkin's  view, when the clinician changes residents' Coumadin dosing, he/she should obtain INRs every three days until the INRs are in a steady state. And never rely on lab results alone to monitor patients. "Use clinical protocols to monitor residents for signs of increased bleeding so you know when to question lab results that are showing therapeutic levels," advises St. Louis-based lab consultant **Terry Jo Giles**. "For example, is the patient bruising more easily than usual or bleeding from his gums?"

**Figure Out Best Testing System**

Rifkin's example also points to the need for facilities to think through their systems for staying on top of residents' INRs. "The problem in nursing homes is that usually the labs are drawn on the day shift," notes **Kim Shields, RN, CPHQ**, clinical systems safety specialist at **Abington Memorial Hospital** and an independent health care consultant in Abington, PA. "And the results come back in the evening when the physicians are out of the office and are harder to reach if the INR is out of range," she says. **One potential solution:** Consider using INR point-of-care testing, Shields suggests. "Then the facility can notify the physician of the results during the day.

Of course, POC testing requires lab back-up testing for out-of-range values, but the facility could do the POC INR testing on the same day the lab comes in and draws venous samples for testing.

Also work with the medical director to identify "a panic INR" level. In Shields' organization, an INR of "4" fits that bill. "We have an alert built into our hospital pharmacy computer system where the pharmacist sees the INR of 4 or higher and stops Coumadin from going to the floor until the physician is notified of the results," she says. The physician doesn't always reverse the INR of 4 with vitamin K, however, unless the patient has symptoms of bleeding. "That's because it can take a long time to get the INR back up to a therapeutic level" if you reverse it, Shields says.

**Watch Out for Drug Interactions**

Beware that numerous drugs and even foods interact with Coumadin and can affect the patient's coagulation levels. "The Physicians' Desk Reference contains a whole page of drugs that may interfere with or displace Coumadin and affect the INR," notes **Steve Levinson, MD**, a medical director at several facilities in Maryland. "Many of these drugs are commonly prescribed ones, such as antibiotics or Phenobarbital."

Residents can have a therapeutic INR but still be in danger of a serious bleed if you put them on drugs that compete with Coumadin for protein binding. "The person may be OK but then he starts an antibiotic and will suddenly have a bleed," Levinson cautions. **The safest tack:** Implement a policy to check INRs any time the physician starts or stops a drug, suggests **Barbara Bancroft**, a consultant with **CPP Associates Inc.** in Chicago. "That way, the staff doesn't have to check each drug in the PDR to see if it affects Coumadin," she notes. "Also ask the consulting pharmacist to develop a hot list of the most commonly used drugs that interact with Coumadin," she suggests.

Flag patients receiving more than one anticoagulant. "Residents taking Coumadin, aspirin and Plavix have effectively had all of their clotting mechanisms blocked, even though the drug combination may be a valid attempt to prevent disease," Levinson warns.

**Keep the Diet Consistent**

The trick to avoiding problems is to keep residents' diets consistent, says **Jennifer Rodis, PharmD**, clinical assistant professor at **Ohio State University College of Pharmacy**. Make sure residents on Coumadin eat consistent amounts of vitamin K-rich foods each day, such as leafy salad, broccoli, spinach and cabbage. Green tea can quickly reverse a resident's INR (but not Earl Gray or black tea), Rodis says.

Residents taking Coumadin who eat poorly or stop eating regular meals can also become over coagulated. "If the resident gets sick and receives an antibiotic and IVs without eating, he can develop an out-of-range INR even if he isn't taking Coumadin," cautions **Mark Wurster, MD**, a physician with **OSU Internal Medicine** at Grove City. "The antibiotic depletes the normal gut flora and removes the person's vitamin K source."

**Watch out:** "Cranberry juice  ... can cause the resident's INR to rise," Shields warns.

Clinical Resource: Print a handy fact sheet on Coumadin, vitamin K-rich foods and other dietary tips at http://ods.od.nih.gov/factsheets/cc/coumadin1.pdf. Also check out a unique Web-based Coumadin management system pilot tested by Shields in a nursing home at www.webinr.com (cost is nominal at $3 per patient per year, Shields says). See "Check Out This Web-Based Coumadin Management System" for the sample Web page.