

A Plume Problem Scenario

You are a physician in a small community (about 1,000 residents). Yours is an old family in this area; your great-great-grandfather settled here in the 1800s and was a famous officer in the Civil War. Several members of your family are buried in the local cemetery.

Over the past couple of years, a few members of the community have described to you their puzzling physical symptoms. Recently, a patient presented you with similar but more serious complaints: weakness, tingling and numbness in his hands and feet, and dark warts on the palms of his hands and the soles of his feet.

You listen carefully as your patient responds to questions related to his medical history. He works in the small, local factory (Private Well #6, on the Community Map) that produces wood preservatives. He has lived in the area for about 10 years. He and his wife of 10 months have a private well at their home. His wife has not exhibited similar symptoms. He quit smoking three years ago and does not drink alcoholic beverages. He takes no medications, only vitamins.

You meet with members of the town council and express your suspicions—that the symptoms you have documented over the last few years are related to chronic arsenic poisoning from contaminated drinking water. You advise them that the arsenic standard for drinking water set by the EPA (Environmental Protection Agency) is 10 parts per billion (ppb). The town council votes to budget money for ground water testing that will initially be limited to wells already in existence.

