Shortridge, who first identified the virus.

Until now, there have only been two reports of avian strains infecting humans, and both of those simply caused conjunctivitis, an eye disease. "When we first heard about this, it raised a lot of questions," says Dominick Iacuzio, an influenza specialist at the U.S. National Institute of Allergy and Infectious Diseases (NIAID). At the top of the list: Has H5N1 mutated into a strain that can more easily infect humans?

Webster notes that "the dogma was that H1, H2, and H3 are human viruses," because these hemagglutinins specifically bind to molecules on the surface of human cells. H4 and H5, in contrast, do not bind to these human receptors. Pigs, explains Webster, have both types of receptors. "The information that has built up over the past few years is that the pig is the mixer," he says, which creates new strains of the virus by combining, say, avian and human viruses. But the infection of a human with an H5 suggests that this tidy scenario is too simplistic.

The international collaboration studying the event has been trying to identify the genetic changes that enabled the virus to cross the species barrier. "Information on the genetics of both the chicken isolate and the human isolate may ultimately provide an insight into the possible source and mode of transmission of the human virus," says Shortridge. Webster recently has sequenced the genes of the avian H5N1, and the human isolate has been sequenced by researchers at the CDC, the National Influenza Center in the Netherlands, and the National Institute for Medical Research in London. Webster won't discuss the results, but says he and his collaborators are now preparing a manuscript for publication that details their findings.

Webster suspects that this case may have surfaced because of improved surveillance networks rather than a fundamental shift in this strain of flu's ability to infect human cells. Then again, he's seriously concerned that a similar virus sooner or later will get a foothold in humans. "If it gets into a human once and dies out, fine," says Webster. "But next time, will it?" Indeed, Webster has a paper in the August supplement of the *Journal of Infectious Diseases* that, based on history, molecular epidemiology, and surveys of people's immune status, says another human pandemic is "a certainty" and "its occurrence becomes more imminent with time." Adds the CDC's Arden: "It's always possible that once a virus gets into humans it could continue to adapt to humans."

Both Webster and NIAID's Iacuzio see this case as something of a fire drill for public health officials who battle influenza. Says Webster: "This provides good practice for what eventually will happen."

–Jon Cohen

DEPARTMENT OF ENERGY

Peña Gives Lab Reform a Nudge

Admitting that "we've not made sufficient progress on laboratory management reforms," Department of Energy (DOE) Secretary Federico Peña has ordered up a blueprint for the next generation of big scientific machines as part of a larger effort to rethink DOE's R&D strategy. The move comes almost 3 years after a blue-ribbon panel called for sweeping changes in how DOE manages its network of laboratories and amid growing concern that the reform effort has stalled.

"I know that some of you are frustrated, but this is changing," Peña promised a group that included the head of the Laboratory Operations Board, a panel of independent advisers and DOE officials set up following a 1995 task force led by Motorola chief Robert Galvin. Last week, in a report to Peña, the board said that DOE needs "a more rapid rate of progress" and noted a loss of momentum following the departure of Hazel O'Leary as DOE secretary.

Peña embraced the board's suggestion that DOE draw up a specific reform plan covering each facet of its multibillion-dollar R&D effort. Three major goals are to reduce red tape, to bring in more outside researchers, and to develop a long-range road map that likely would outline the cost, purpose, and importance of new reactors, accelerators, and other major scientific machines. Peña also promised that Ernest Moniz, a Massachusetts Institute of Technology physicist who recently worked for the president's science adviser, will take the lead role in pushing for lab reform as soon as he is confirmed as undersecretary.

In the past, the department has tackled lab facilities one by one. For example, energy research officials are seeking Peña's approval for a National Spallation Neutron Source at Oak Ridge National Laboratory in Tennessee. Lab operations board members, however, worry that facility decisions are made on a piecemeal basis. Responding to that criticism, Peña ordered DOE energy research chief Martha Krebs—who lab sources say is a leading candidate to succeed Sig Hecker when he steps down next month as director of Los Alamos National Laboratory in New Mexico—to oversee the facilities study.

In her role as chair of DOE's R&D council, Krebs also will focus on ways to reduce red tape at laboratories. The goal, Peña said, is to "let researchers spend more time on research and less time on paperwork." Peña also wants the council to come back in 90 days with a plan to foster exchanges with universities and industry.

Peña also promised to develop a strategic plan for civilian research that matches the nuclear weapons stockpile stewardship program at the three weapons laboratories. In addition, he asked the Lab Operations Board to study whether the lines of authority between DOE field offices and headquarters should be redrawn. DOE officials say these studies will be a big help to Moniz.

–Andrew Lawler

CHEMISTRY

Transuranic Element Names Finally Final

FRANKFURT, GERMANY—Laying to rest 2 decades of Cold War bickering, chemistry's high court has finalized the names of the elements with atomic numbers of 104 to 109. The International Union of Pure and Applied Chemistry (IUPAC) this week advised discoverers of the elements that it had accepted the recommendation of its international naming commission.

There were two contenders for elements 104 and 105: the Lawrence Berkeley National Laboratory in California and the Joint Institute of Nuclear Research in Dubna, Russia. The IUPAC committee accepted a compromise proposal that named number 104 rutherfordium, after Cambridge physicist Ernest Rutherford. Element 105 will be called dubnium, after the Russian lab. Element 106 is now seaborgium, after Berkeley nuclear physicist Glenn Seaborg.

The Heavy-Ion Research Laboratory (GSI) in Darmstadt, Germany, had sole priority for elements 107 to 109, which the lab forged between 1981 and 1984. These are now called, respectively, bohrium, after Danish quantum physics pioneer Niels Bohr; hassium, after GSI's home state, Hesse; and meitnerium, after German physicist Lise Meitner. Says GSI's Peter Armbruster, who led the team that discovered these elements, "Finally, the problems and quarrels are settled."

All the problems but one, that is: Each of the three labs says it was first to create 110. "I'm not aware of any consensus in the community yet over which group can lay claim to having discovered 110," says Rayford Nix, a nuclear theorist at Los Alamos National Laboratory in New Mexico. Nevertheless, most members of the three teams are willing to leave IUPAC out of this one. Says Seaborg, "I am in favor of getting together to settle on a name for 110."

GSI has an undisputed claim to elements 111 and 112, and officials expect to propose names by the end of the year.

–Richard Stone