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[00:00:37] **Speaker 1** What do we know about the spread of bird flu in Wisconsin? The avian virus has hit commercial poultry flocks in Kenosha and Barron counties, where one worker also contracted it. It's been confirmed in wild bird populations across the state this winter, and it's suspected to have killed 90. Mallard ducks on a pond and Allegheny County just this week. Confirmation of that outbreak awaits test results. We turn to Doctor Michael Osterholm, epidemiologist at the University of Minnesota Center for Infectious Disease Research and Policy. And thanks very much for being here.

[00:01:13] **Speaker 2** Thank you.

[00:01:14] **Speaker 1** So what is the status of bird flu in this region? And are we holding it at bay?

[00:01:21] **Speaker 2** Well, first of all, one has to understand that the natural reservoir or the location where this virus exists is actually largely in waterfowl and waterfowl across the North American continent are just about everywhere. There's over 40 million of these birds. And when they get infected, sometimes they die, but oftentimes they won't. And they're able to spread the virus in many locations at one time. So we're seeing activity right now, not just in the upper Midwest, but throughout much of the country. And is when these birds then have contact with other animal species, or, for example, that a waterfowl that may die and consumed by another animal species, they get infected. And what we've also seen, of course, is when the poultry world where and we do have an abundance of poultry, both chickens and turkeys, as well as egg laying chickens in the upper Midwest. And what's happening is that virus is making its way into these barn, either through what we call a lack of biosecurity, where people don't change, you know, their clothing between the barns, they don't, you know, adequately wash their boots, etc. but also, we're seeing evidence now of us wind blowing transmission, where again, flock of geese may very well land on a field somewhere out there eating all day the corn that was left from the harvest and then defecating. And then as that dries in the wind blowing potentially into these barns. So we have some real challenges right now. The final area, of course, that we're so concerned about in Wisconsin has every reason to be concerned is the issue of dairy cattle. We saw a little over a year ago the spillover of this virus from birds to dairy cattle, and the fact that the virus now can replicate very well in the utter of the cow. Something we did not know until this past year. And so we've seen large outbreaks throughout the country, primarily in the west western states, California being the really major location where we continue to see transmission between cattle, dairy cattle after once they became infected with that bird spillover.

[00:03:26] **Speaker 1** What's the expectation as to the, you know, widespread spread of this and even into Wisconsin and it's dairy cattle?

[00:03:36] **Speaker 2** Well, first of all, this virus is around the world right now. We have a major outbreak ongoing right now in Antarctica, in which a number of the penguin populations are at great risk from this virus, and many are dying. So it's everywhere. What we really need to look at, though, down the road, is from a human disease standpoint, what are the animals were most likely to have contact with that could bring the virus to us? And that really remains largely from the poultry side of the house as well as the dairy cattle. So yes, we might have contact with a wild animal that dies, but you can obviously do that safely with wearing gloves, etc. but when we're having everyday contact with dairy cattle or with poultry, that makes it a very different situation because there are people can get infected. Now, I can say that with over 70 cases of H5n1 infection in people in this country in the last year, most of them have been people who work in dairy operations or in poultry operations. Fortunately, almost all of these illnesses have been very mild, what we call conjunctivitis or infection of the eye, because there happens to be certain receptor sites or cells in our eyes that allow the virus to penetrate that, but not necessarily into our lung. What we worry about is one day that the virus will continue to mutate and change in such a way that then can start to develop infection in our lungs. And that would be potentially the first step towards a new influenza pandemic.

[00:05:05] **Speaker 1** It's exactly what I was going to ask you about what you what your concerns are around a pandemic.

[00:05:13] **Speaker 2** Well, you know, I used to say in the earlier days of of influenza and the potential for a pandemic that you always have to sleep with one eye open. Well, today I sleep with both eyes open as it relates to influenza. I think that we've never seen this magnitude of transmission around the world. We've never seen the number of opportunities for this virus to change genetically. Think about every time a new H5n1 virus is hatched out of a cell. That's like another throw at the genetic roulette table for a mutation. And a mutation, that means this could be the changes that would occur enough in the virus to readily infect humans, who then, in turn can infect others by just breathing. So this is a real issue. Unfortunately our vaccines we have our our good vaccines, but they're not great. We would have a very difficult time making enough vaccine in the first year of a pandemic to to cover more than a quarter of the world's population. These vaccines will surely have a positive impact on your clinical outcome, but they're not necessarily going to prevent you from getting infected. So I think that we have a lot of work to do, and I wish we would focus on that right now. Our investment in new influenza vaccines for humans and animals is really just a small, small part of what it needs to be.

[00:06:30] **Speaker 1** Is the CDC and other federal agencies keeping pace with bird flu at this time?

[00:06:37] **Speaker 2** Well, over the course of the last month with the new administration, we have to understand that, you know, there may be some downtime in terms of responding as it would be with any change in administration. But we're also concerned that we're seeing these dramatic cuts that are occurring that are pretty indiscriminate, more of a machete approach than a surgical knife. And with that, they are taking people who are critical to responding to this kind of activity and what they can do. We're also seeing right now the potential impact on research funding. The NIH may have to change how much money they provide universities to support basic research, which if that were to happen, it would be really a major research disaster in this country. Much of that research we see today is things like applied research on vaccines for influenza and coronaviruses. So I am very concerned about that. And we already we're not spending nearly enough to to be commensurate with the risk of pandemic flu plays. But with recent potential cuts, it could really be a real a real challenge.

[00:07:47] **Speaker 1** What about a federal plan to address avian flu? Is there one.

[00:07:52] **Speaker 2** U.S. Department of Agriculture and a press briefing in an op ed piece, recently laid out some general concepts about a plan for responding to poultry and dairy cattle. I think many of us are waiting for much more detail on that plan to before we pass judgment. But, you know, we've really, for the last year, have have not adequately handled the issue in terms of poultry and cattle becoming infected. You know, not much we can do about the wild waterfowl. You know, they're going to be out there. They're going to continue to to, you know, spread the virus around North America. But we can do something about the production of poultry as well as the dairy cattle. And I think that at this point, we surely need to do a lot more than we're doing.

[00:08:41] **Speaker 1** Not to be alarmist, but how worried should we be?

[00:08:45] **Speaker 2** Well, as I say, often the pandemic clock is ticking. We just don't know what time it is. And I think from that perspective, you know, it could happen tomorrow, but it could be five, ten years from now. We don't know, but it's one of those ones. You don't want to wait to find out that you weren't prepared when it happened. And so I think the immediacy of our of our work to try to come up with better vaccines is really very critical.

[00:09:08] **Speaker 1** All right. Doctor Michael Osterholm, thanks very much.

[00:09:12] **Speaker 2** Thank you. On.

[00:09:16] **Speaker 1** Set. That's it. That's the pandemic clock behind you.

[00:09:21] **Speaker 2** There you go. That's it. You got it.

[00:09:23] **Speaker 1** Wow. You know what you got?

[00:09:24] **Speaker 2** You got it right. Go ahead. You know.

[00:09:26] **Speaker 1** It was really unusual here. Every every single question that I intended to ask you, you actually went to and answered before I asked it, so.

[00:09:37] **Speaker 2** Well, you know, your staff sent me the text. I'm joking. They didn't. They didn't tell.

[00:09:41] **Speaker 1** Me. Maybe it's just the I want.

[00:09:43] **Speaker 2** I wanted so badly to impress you that I was smart. So then I thought, well, if I can get a hold of your questions ahead of time. But that didn't work. So I'm not.

[00:09:51] **Speaker 1** Smart. Like, like like you need to do that. All right.

[00:09:55] **Speaker 2** Yeah. There you go. Well, you guys have a good one. Thank you again. You too. Thanks. Bye bye. Bye. Bye bye.