

Building Health Q&A
Organized by the Harriot College of Arts and Sciences, University Environment
Committee, and Faculty Senate
East Carolina University
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Transcript:

Panelists:

- Emmanuel E. Zervos, MD
Professor, Division of Surgical Oncology, ECU Brody School of Medicine
- Suzanne Lea, PhD, MPH
Associate Professor, ECU Department of Public Health
- Alan Christensen, PhD, Professor and Chair, ECU Department of Psychology

Moderator: Susan Pearce, PhD, ECU Department of Sociology

Pearce, Susan

This session has been organized by ECU's University Environment Committee, the Staff Senate, and the Dean's office of the Harriot College of Arts and Sciences. I would like to thank Dean Donnell, who is the Dean of Harriot College, for initiating this idea and inviting us to organize it.

Pearce, Susan

So I'd like to introduce the people who will be on the panel today.

First is Doctor Emmanuel Zervos, who is professor in the division of Surgical Oncology at ECU's Brody School of Medicine. I see him there; welcome. And Suzanne Lea, PhD, MPH associate professor, ECU Department of Public Health and she's with us. And then Alan Christensen, PhD, who is professor and chair of the Department of Psychology here at ECU.

So if you're ready, I would say the first question, and this is for anyone who would like to start. How common is pancreatic cancer if you know?

Lea, Suzanne

Doctor Zervos, did you want to comment on that? Or I can actually address that?

Zervos, Emmanuel

I'll start and I'll give sort of a national perspective and Suzanne is very good at. It's a sort of calling these data down to a more regional and Eastern North Carolina focus.

And just introduce myself and so I am a surgical oncologist. I'm the director of the Vidant Cancer Center. I've been here in eastern North Carolina for 14 1/2 years now and have devoted my entire academic career to research and both benchtop research clinical research into pancreatic cancer and so that was one of the things that attracted me to Eastern North Carolina There was a relatively high incidence of pancreas cancer in these 29 counties and a paucity of providers or practitioners that were experts and wanting to specialize in what was then a pretty rare cancer type.

And so when I came here there were, across the country is about 28,000 new cases of pancreas cancer diagnosed a year. That was in 2007 and then the incidence is rising. So today that number is about 48,000 new cases a year, so it's still a relatively rare cancer although celebrities and well-known people are diagnosed with the disease.

Suzanne, do you want to talk about eastern North Carolina statistics a little bit?

Lea, Suzanne

Yes I can. And in North Carolina in particular. So I did pull together a few slides that might help. And if it were possible, I could share my screen and then talk from some of the slides. If that would be OK may I share my screen.

Pearce, Susan

You may, if you have trouble, you could email it to me and I can share it.

Lea, Suzanne

OK, let's see.

OK, can you see that slide deck?

Pearce, Susan

Yes.

Lea, Suzanne

OK, great.

Well, we'll just start here. So in North Carolina, heart disease is the leading cause of death, but cancer is the 2nd leading cause of death and cancer has been the leading cause of death in North Carolina since 2009.

Pancreatic cancer is the fifth most common cause of cancer death in North Carolina and the 12th most frequently occurring cancer as of 2018.

53% of pancreatic cancers are between the ages when they're diagnosed of age 65 and 84, and then roughly 1/3 of between 45 and 64 years of age, and African American blacks have the highest incidence and mortality, and men have a higher mortality than women.

And this just summarizes incidence. It just simply means the diagnosis of new cases and then mortality are the deaths. So you can see here what the leading causes of incidence NC cancer

cases and the actual raw number, and then the rate of themselves. And of course pancreatic cancer is up there in the top and then also the 5th leading cause of death overall.

And this is for a 2018. And then for incidence and mortality at they're very similar, so I'm gonna move to mortality.

A map, but this just shows the new cancer cases, the rate of pancreatic cancer in the state as just continue to go up as Doctor Zervos stated from 2002 to 2018. So we just see a very linear fit of new incidents of pancreatic cancer.

And this also shows the change. Pancreatic cancer is actually here. It is on the slide on the left and it is increasing, and this 1.4 simply means that it's increasing on average at about 1.4% a year over the five years between 2014 and 2018, of course, is in all ages, both sexes and all races. So pancreatic cancer is increasing in the state.

This shows the mortality trends by sex and race and you can see that the rate per 100,000 is fairly flat across the years, from 2007 to the 2016-2018 interval.

Here's a map of North Carolina and this blue county is Pitt County, where we are; and these are categories of low to high rates of mortality for pancreatic cancer, and Pitt County is one of the lower counties: 9.7 to 10.9 deaths per 100,000.

And you can see, for example, Robeson County has very high mortality at 13.1 to 18 deaths, per 100,000. Pitt County compared to North Carolina actually has a higher mortality rate than the state. Overall, you can see that here in this column, and the US rate is just about in the middle between Pitt County and North Carolina at about 11 deaths per 100,000 population.

In Pitt county mortality rate has been stable over the last five years, but in North Carolina and in the USA, overall it has been rising.

This is also the mortality change for pancreatic cancer. It's been about stable over the five-year interval, 2014 to 2018, which means just on average it's been about the same number of deaths each year.

And then these are the historical trends for death. Luckily it's not as fatal as it used to be. The actual mortality rates have seen a huge decline for a lot of reasons, but this is definitely i the incidents are what we're very concerned about. And overall the United States pancreatic cancer is not in the top ten in terms of new cases diagnosed, but it is in terms of lethality as the fifth most common cause of death in the US for cancer deaths, just like in our state. OK, so I'll just quit sharing.

Pearce, Susan

OK, thank you very much.

Do you have anything else to add, Suzanne?

Lea, Suzanne

No, that was just some data about the incidence and mortality.

Pearce, Susan

OK, good thank you. So the next question is what are the known risk factors for pancreatic cancer?

Zervos, Emmanuel

So there are really no known risk factors for pancreas cancer, aside from anatomic or physiologic derangements that results in a chronically inflamed state of the pancreas, and those are hereditary pancreatitis. If you have that, you know that you have it. Epidemiologically, I think that the only real risk factor that surfaces consistently is cigarette smoking, as with most other cancers. But aside from that, when you look at large populations of patients with pancreas cancer, you run a logistical regression looking for common risk factors, and again, in the absence of a genetic predisposition or an anatomic variant that favors the chronic inflammatory state, there really are no known risk factors.

Pearce, Susan

OK, thank you, and you have kind of answered the next question, which is what is unknown, right? So next I'd like to ask, can you speak to any risks associated with these issues in Brewster and whether they are linked to cancer? We do know about the presence of asbestos. One person is saying that the air intake system allows cigarette smoke and exhaust fumes to circulate as well as exposure to exhaust fumes from the bus is outside the building.

Zervos, Emmanuel

Well, I think that that this question really gets at the core of what it is that I'd like to communicate tonight and in my answer I'll try to emphasize my biases in this regard. There's a perception of a belief that there may be a cancer cluster of pancreas cancer that's occurring in the Brewster building and if that is in fact the case, it is likely arising from an unknown factor or yet to be identified factor that has not yet been described, so diesel fumes and asbestos and other carcinogens have not been specifically implicated in the development of pancreas cancer. That's not to say that there's not something out there that causes pancreas cancer. As a matter of fact, I spent a good part of my career giving pancreas cancers to rodents with N-nitrosobis(2-oxopropyl)amine and studying different treatment methodologies, so I know we can cause it.

But it's exceptionally difficult even when you're trying. In those cases, it was with a, a direct insult to the pancreas, meaning trying to expose the pancreas directed at those carcinogens in order to get a pancreas cancer to develop their which is not a real-life scenario and the pancreas isn't really ever exposed directly to a toxin. It's exposed through what we breathe and what we eat. As with most cancers.

And I think from what I've seen and the emails that I've seen, there's justifiably high level of anxiety around what appears to be a possible cluster in pancreas cancer?

And I think first and foremost, that's really what has to be established is - are we dealing with a cluster or are we dealing with just an unfortunate circumstance of coincidences that are occurring in a specific location?

And what I mean by that is that in doing this for the past 20 years as an attending physician, I see all aspects of this disease and this diagnosis, and I see patients who are in an automobile accident that have a CT scan of their abdomen and have an incidentally identified cyst of the pancreas, who are told by an ER doctor that they need to come and see a surgeon, and by the time they get from between somewhere between the emergency room and my office, they come in with the belief that they have pancreas cancer, when in fact they just have an abnormality of their pancreas that was discovered, incidentally, during an Xray that was obtained for other reasons.

And then there's true pancreas cancer. Like Alex Trebek had and other celebrities that who we've lived through their battle with that cancer. And then there's Steve Jobs also. And Steve Jobs had what some of us consider pancreas cancer and some of us consider a different type of cancer altogether, which is a neuroendocrine type of tumor. It can occur in any organ.

And I hesitate to tell my patients that have neuroendocrine type tumors which are different than pancreas cancers, I hesitate to tell them that this is the type of cancer that Steve Jobs had. Because we all know what the outcome of his disease was, that it ultimately ended up taking his life. But the type of pancreas cancer that he had is in most cases very treatable. Very curable. He chose a different path in terms of his treatment that was nontraditional and to what extent it led to the progression of that disease, I don't know.

But when I tell patients that they have a neuroendocrine tumor of the pancreas, it's usually good news for them. They come in feeling as though this is the type of pancreas cancer that's going to kill them. And I tell them that this is the type of pancreas cancer that they will live with, and in most cases that is the case. And so, first and foremost, I think I feel like it's unfortunate that while there's good and bad sides to getting this out into the public space through the media, the good thing is it has brought the attention to this problem to the highest levels of administration such that I believe that everything is being done to establish whether or not this is in fact a cluster.

But on the other hand I think it's creating a level of anxiety that may be premature that we don't know exactly what the true rate and incidence of pancreas cancer is in the Brewster building. And so far I think attempts have been made to answer that question in very indirect ways and this is the hardest way to do this type of thing, which is through the Death Registry, and public records of death certificates, which in and of themselves are flawed or going through the Central Cancer Registry, and that's a slow and tedious process, and in many cases is really dependent on the accuracy of the independent registries that feed into the Central cancer registry.

And as you can imagine here at Vidant, the tumor registry is robust and we have abstracters that go into the patient chart and ensure that when we call something a pancreas cancer, it is in fact a pancreas cancer, but that may not be the case at some of the smaller hospitals that serve our area in our region, and so even those very basic and rudimentary descriptive statistics may not be enough to answer the question as to whether or not this is a true cluster.

And only by going into individual patient records and charts, I think will we be able to do that with the level of confidence that's going to attract the resources necessary then to uncover potential yet-to-be-identified causes.

I've said a lot there and I think that's going to generate a lot of questions amongst the group, so I think it may be worthwhile to pause at this time in and entertain questions about what I've just said.

Pearce, Susan

That's a great idea, so if you would like to ask a question now, feel free to put one in the chat or to raise your hand or just to chime in.

Jones, Katherine

Hi I have a question; can you hear me?

Pearce, Susan

Yes.

Jones, Katherine

I would like to ask Doctor Lea: To address the challenges of trying to evaluate this situation as a cluster, given that different people may have spent different amounts of time in the building, so if, for instance, how would a cancer epidemiologist address that question of exposure? And are there methods for, you know, saying this individual spent two years in the building? Tuesday and Thursday. How would you adjust for something like that?

Given that while there may be a number of individuals who all spent time in the building, they may not have all spent the same number of years or the same number of days, or that sort of thing.

Lea, Suzanne

I can try to answer that the first thing is that NIOSH is currently working on investigating this suspected cancer cluster. And there is a process that CDC goes through. NIOSH is an agency or branch of the Centers for Disease Control and Prevention, and there is a protocol that is followed to investigate a suspected cancer cluster with the overall goal of being whether or not an excess number of cases has a cause and whether or not the cases are likely to be associated with some agent in the building, so that's the overarching goal: is to correlate the excess cases with something that could be a cancer-causing agent.

The first thing that has to happen is gathering information to learn about the cases. And this is a what Doctor Zervos had just mentioned we need to learn more about. What constitutes the situation with the patients that are there? I think it's only faculty. It might be staff involved and we will see what that data supports. Because one of the things that has to be determined in step one is whether or not there's enough evidence to determine that.

These cases might fit the definition of a cluster, and particularly with respect to some common

etiology. So remember, we're trying to look at the association. Is there a common exposure? Some etiologic agent? And then if it looks like there's some evidence, we can move to Step 2, but the exposure piece, if it needs to also be there and so the next step after that is really looking more carefully at whether or not the cases that are present exceed what would be expected. And in this situation here we have cases as Doctor Zervos mentioned some of these cases could actually be something else. We don't have the death certificates. We don't know exactly what the death certificate says. And we also don't know what underline conditions or what other. Other secondary causes of death might be on the death certificate, so the issue of identifying what the population of risk is. So cases arise out of a population. And so the population at risk has to be defined as well. And then at that point, once you have the population at risk and a comparison.

A group with some cancer rates, which would probably come from Pitt County or similar county, or perhaps and the state. Overall, you could assess whether or not the observed exceeded the expected. And then Step 2 would help move to Step 3, which is the feasibility of actually doing an epidemiologic study. I think that's what you're suggesting in terms of exposure measure. So all and Step 3 is really looking at the feasibility of conducting an epidemiologic study. And so there are lots of pieces that go into feasibility studies. Whether or not you can define the population of risk given the number of people that would be involved, perhaps with working or even moving in and out of the Brewster building on a regular basis. Or perhaps it's several buildings altogether in that area.

But that's where feasibility would come in assessing. What is the true case definition? How are we going to measure exposure? What are the exposures that would have already been biologically identified? And then in step four, that's where a hypothesis-driven analytic epidemiology study would be conducted. So it wouldn't be until probably late in Step 3 that something like a time exposure matrix for individuals that may come in and out of contact with the Brewster Building would actually be developed and then during the implementation of the study, that's when those measurements would occur. So there'd be a lot of background looking at the feasibility of how these exposure measures would happen should they, happen that way.

Jones, Katherine

Thank you, that's really helpful.

Lea, Suzanne

Thank you.

Pearce, Susan

Yes, thank you Doctor Lea. So Karin Zipf has a question.

Zipf, Karin

Hi everyone, I want to thank you all for holding this panel. I'm very very grateful I have been an inhabitant of Brewster for the past 20 years. And I'm not even going to count the number of Thursdays have been in the building or whatever. It's just my concern is a matter of understanding that I am now in a situation where I want to make sure I get the right diagnostics going forward and monitoring my health because I have spent so much time in a building in which even if it's coincidence, it has association with a number of people dying of pancreatic

cancer, so there is an association there no matter what, and whether that is caused by the building or not, there is an association of people passing away from pancreatic cancer in that building, so I want to know the best diagnostic. My own physician is very concerned about the incidents there and has been very very receptive. But I am concerned about diagnostics and what insurance will cover. And if there's a way that ECU might be able to help convince the insurance company if necessary to get certain diagnostics, what do you all recommend? Are there some ways for us to sort of monitor our health in a proactive way. That will also help us with anxiety.

Zervos, Emmanuel

I think that's a great question.

Zipf, Karin

I think in the absence of information we're seeking something that we can do proactively. In the event that are, our worst fears are realized in that this is in fact putting people at risk.

Zervos, Emmanuel

Maybe to answer your question best would be to go back and look at patients who have very strong family histories of pancreas cancer. When we think that about 10% of pancreas cancers are genetically or are somehow related to genetics. And studies looking at just patients who have got one or more first degree relatives with pancreas cancer and using the most up to date screening methodology have failed to identify a specific screening test for pancreas cancer that is sensitive and specific enough to justify the cost of those tests. And that's in a really large population of people in a cancer with a relatively small incidence. So you can imagine the bar is pretty high to get to a screening test in this particular circumstance.

We do know of some genetic mutations that really put patients at risk for pancreas cancer specifically. Maybe some BRCA mutations, some variants, BRCA mutations, and that, combined with a very strong family history, have led to do screening protocols which involved MRI and endoscopic ultrasound alternating every six months. Again, you have to meet really, really specific criteria for an insurance company to pay for those really expensive tests. And I'm afraid that in the absence of proving that this is a true cluster, if one wanted to be proactive and get those types of screen tests, and those are the most sensitive tests available, that those costs would be borne by the individual.

And then I think the corollary or follow up question is, well, what about less expensive tests like CT scan or even blood tests that screened for that you probably have seen or heard of that screen for circulating tumor cells. Those are available and we're considering that platform here at the Cancer Center. But again, those tests run about \$900 each. And they're really good at common cancers, but not so great at less common cancers.

And so much though that the FDA has not yet approved a single cancer screening platform for coverage for approval in anticipation that these would eventually be covered by the federal government to pay for these tests. So we're not quite there yet in terms of screening tests. So then what is my recommendation to you? It is really to have that relationship with your primary care physician, and in addition to understand the symptoms and warning signs. And once those manifest to move forward quickly and aggressively with imaging and other testing

when justified by your presenting symptoms.

But I do think that just the fact that you've been in the Brewster building for 20 years, it is not going to change the minds of your ... You're obviously on the state health plan. We're all on the same state health plan. So it is not going to get Blue Cross and Blue Shield excited about paying for screening tests.

Zipf, Karin

May I ask a follow up?

Zervos, Emmanuel

Yes.

Zipf, Karin

So you know, even if I were willing to pay for the MRI myself, I can't even get it. That doesn't even seem to be an option. My doctor won't even order it unless the insurance company will cover it. How do you go about getting an MRI? It is \$1500 to \$2000 if you wanted to do it out of pocket to begin with.

Zervos, Emmanuel

Yeah, well, you'd have to convince someone to order it. They would order it and it would go through an approval process. So there would have to be some indication for ordering it.

And it would have to go through approval process denied. You would then sign a waiver that says I would cover any costs associated with this test. If they aren't covered by insurance then you'd go forward and have the tests and the billing would be sorted out on the back end. Of course it would be you. You would have signed something that said you would be liable for that expense.

I think that is possibly something that can be done is to find a way to work with our medical community so that people that wish to get screened, even if it involves out of pocket expense, it can be done without jumping through those hoops. Currently I don't know how to. I don't know how that would be done, but I can look into that. N.B. – we have subsequently established from Marilyn Buchholz radiology service line administrator for Vidant health that out of pocket expense for MRI not covered by insurance is \$3,598.

Zipf, Karin

That would be a really helpful to know because it is one of the things that I'm really interested in getting. I don't think I have any symptoms of pancreatic cancer, but I sure would like to have a baseline considering I've had three friends in the building who died of pancreatic cancer in the last three years. But thank you very much.

Pearce, Susan

Yes, thank you. Doctor Christensen.

Christensen, Alan Jay

So I thought, maybe as a psychologist I would say something about why I'm here and then just a couple of thoughts. I study risk perception: how people perceive health risks and how they respond to them. And some of that work is studying cancer population is not in pancreatic cancer specifically.

This is a really stressful situation and I when I first heard about this from being done now and from some of the department chairs that are in that part of the building, my heart went out to all of you. I mean to have to even give this a second thought as you go about your routine is very stressful. And not even to mention if you've lost a colleague or a or a friend to the disease, right? And then it's exponentially even more so. In the work that I've done one of the things that becomes very clear is that as human beings we want an understanding of why things happen when, especially when bad things happen.

Cancers are really stellar, unfortunately, examples of that there's nobody that's been touched by cancer either personally or someone they knew that wasn't driven to find an explanation. That's human nature that's been well-documented. Psychologists have psycho-babble terms that they use to talk about that striving to understand cause. Sometimes that understanding is just not there and that that makes it a lot more stressful.

Sometimes the causes are apparent. Pancreatic cancer as Doctor Zervos has detailed very well, even relative to other cancers. I mean, all cancers are insidious. All cancers are horrible, right? They all suck. All of those things. Pancreatic cancer is particularly insidious. Not much is known about risk factors, screening procedures, or are very difficult and expensive and hard to come by. All of those things make it more frightening. They make it more unsettling. When we have reason to think that maybe we're at risk, certainly somebody that we knew must have been because they had the disease, it's human nature to really strive to understand the cause.

It's also important, I think, that we remind ourselves that, well, that not knowing the cause makes it more unsettling and more anxiety provoking. It doesn't necessarily mean warm up more risk. That's a separate question. Some things we don't understand are relatively low risk to us. Some things we understand really, really well, are in the end what we end up being it very much at risk of.

So those are different things, and I mean I'm not an expert, you've heard from experts on just how relatively rare pancreatic cancer is. What is known or in most cases not known about risk factors? I just mostly want to say that I understand the anxiety, I understand the wanting to find an explanation, that that's how we're wired. And to sort of be told that there is not an explanation it, it's very difficult.

And you know it's a situation where as Doctor Zervos talked about, the best probably that people can do is, is to take care of themselves in other ways. While we don't know a lot about risk factors for pancreatic cancer, we know a little bit. Certainly stay away from those that you know, control what you can control, smoking being the obvious one.

But just partly I want to normalize the anxiety and so people go through this and when they're

touched by something like this they want to understand the reason. The reasons are always there to understand; it doesn't mean information is not being shared; it just means that oftentimes that we just we don't know, and that's unsettling and important to remember that not knowing makes us feel bad, but it doesn't necessarily put us at greater risk. I don't know if that's helpful.

Pearce, Susan

Thank you; other questions?

Christensen, Alan Jay

Thank you; other questions?

Pearce, Susan

So while we're waiting, I wonder if either Doctor Lea or Doctor Zervos could say anything about whether there has been any research into why North Carolina has higher rates than some other states.

Lea, Suzanne

...of pancreatic cancer overall? So in terms of where North Carolina stacks up.

It's about in the middle of the pack in terms of the States and terms of its incidents and mortality. And while smoking seems to be the most definitive risk factor that that we know about epidemiologically, we also know that obesity and type 2 diabetes are strong predictors of pancreatic cancer. And we also know that in eastern North Carolina and in central North Carolina and in western North Carolina, across our state, obesity is a problem and so is type 2 diabetes, and particularly in the east where we're at a deficit in terms of...

Well, I'll just say that we have very high prevalence of diabetes and obesity in eastern part of the state and in the 29-county catchment area of our service hospital network, but also in the overall 41 counties as well, the counties South of our 29-county catchment area and east of I-95, so North Carolina. Eastern North Carolina is really probably the driver of our high obesity prevalence and likely our high incidence of pancreatic cancer if you look at eastern North Carolina versus the rest of the state. And that is just from looking at data in terms of the correlations with the distribution of the prevalence of these factors across the state when you just stack up a map of obesity prevalence and map of diabetes prevalence and a map of incidence and mortality from pancreatic cancer, many of the counties in the eastern part of our **state, kind of all agree.**

Pearce, Susan

Thank you; other questions?

Alright, I'll feed you a couple that I was sent in advance.

Have there been any other cases where several colleagues sharing workplace space got fatally ill with pancreatic cancer? And I guess that's a question about not just ECU about nationally, and what factors were identified. Anyone happen to know?

Zervos, Emmanuel

I've done a Medline search looking for this and have not been able to identify any pancreas cancer clusters in the United States that have been published.

Pearce, Susan
OK.

Zipf, Karin

Wow, you might have an opportunity here.

This Karin Zipf again. I wanted to follow up just a little bit more with this. Again, the diagnostic testing: Dr. Zervos would you mind running through very briefly the testing diagnostics that you usually conduct when you have a person who comes in with suspicious symptoms, would you sort of walk us through what test do you order and what you're looking for, just very briefly, so that we have an idea of how to visualize what we need, what we might want to do, or what we might be needing to do in order to just sort of be proactive?

Zervos, Emmanuel

Yeah, I think you're asking me what I would do if I worked in Brewster for 20 years.

Let me just start by saying that I'm usually at the I'm pretty far downstream when this happens, people usually get to me that are already carrying the diagnosis of pancreas cancer.

Because the region has gotten pretty good at recognizing the signs and symptoms associated with it, and we've gotten pretty good at specializing ourselves such that we are not involved in the very early diagnostics. That wasn't always the case, and when I got here 15 years ago, what patients raised my level of interest and made me suspicious? Well, patients in that sweet spot of 60 to 70 years of age, new onset diabetes in that age group, unexplained weight loss, and evidence of acute pancreatitis without a cause—meaning no gallstones, no alcohol, no anatomic issue to cause pancreatitis. Those would all be things that I would raise my interest enough to fight to order tests and fight to get it paid for because the likelihood of having a positive finding on those tests would be high and the tests that I traditionally used would be CT scan. And so CT scan now, there are pancreas protocol CT scans which raises the cost but a CT scan in and of itself is not great screening unless you take it to the next level. If it were me and I had limited resources and I was paying out of pocket, I would probably do a tumor blood marker every six months or every year, and you won't get any pushback on that. You can just tell your primary care doctor to order it. And even if they disagree with you, it's probably about a \$50 to \$75 test. And that's something you can do by just being vigilant about the way you feel and about those other things that I mentioned. If my suspicion grew higher and I had other . . . I think we're considering just long-term exposure in the Brewster building as something that's going to raise your anxiety level to a point where you'd be willing to pay for this, I guess, and if I had worked in the building for a long time and I had some other symptom--one other symptom--that made me concerned that was unexplained, I would probably pay for an MRI test. And just get a baseline. And those symptoms would be the ones that I told you about: unexplained weight loss, malaise, new onset diabetes, pancreatitis, unexplained. And typically those presentations. But again, if you wanted to do something that is more affordable, I think it's a blood tumor marker test. They're sensitive; blood Group A doesn't mount the antigen response or doesn't have the antigens and but everyone else does. So that's excludes about 20% of the population. And there are other reasons why the CA 19-9 would go up. But that's something that's something that you could do that may give you some peace of mind.

But, again, blood tests in and of themselves have never been shown to prolong life in people with known diagnosis of the cancers that are being screened. They only result in earlier diagnosis of those cancers.

Zipf, Karin

Thank you so much. Doctor Zervos.

Pearce, Susan

Thank you; other questions?

Zervos, Emmanuel

Karen, I will look into the other question that you had about trying to figure out a way to get screened in the absence of a physician's order as well. And I'll get back to Suzanne or Susan with my findings.

Zipf, Karin

Well, I would greatly appreciate that, thank you.

Pearce, Susan

Thank you.

I don't see any more questions.

Zervos, Emmanuel

I would just make a closing comment since it sounds like we're getting to the end here.

I'm taking care of patients with pancreas cancer my entire professional career. I field these types of questions and patients' family members all the time, especially when their loved one is going through the end stages of the disease and I appreciate how much anxiety this creates.

And I think as Doctor Christesen said, what we don't know is creating more anxiety than what we do know in this case, and that is not true for just the Brewster building, but it's true for pancreas cancer in general. There's just so much we don't know about it in terms of the causes. And the fact that in most cases were unable to diagnose it early enough to make a meaningful difference with the various treatment modalities that we have available to us is exceedingly frustrating for those of us that care for these people, people whose loved ones are afflicted with the disease, and people who feel like they may be at risk for getting it, I just want from my perspective I want to close by acknowledging your anxiety and doing what I can from the position that I sit in to help mitigate it in whatever way possible.

Pearce, Susan

Do our two other panelists have some closing comments for us?

Lea, Suzanne

Well, I'll just say that I appreciate the opportunity to provide the information that I can and hope it was helpful. And I also am very sensitive to this situation. I mean, a lot of you are my friends, I know you, and reach out to me later if you want, and I'll try to be as helpful as I can.

I appreciate your time.

Pearce, Susan
Doctor Christensen?

Christensen, Alan Jay
Fingers crossed it's a long time before there's another case of pancreatic cancer in the building, or among any of our colleagues. But I'm always listening, or if anybody ever wants to chat about this or anything related, I'm easy to find.

Lea, Suzanne
Yes.

Pearce, Susan
OK I want to thank you to our panelists and thank you to everyone who joined us today. A final round of applause. I think we've got some good information and I hope everyone stays well.

Lea, Suzanne
Thank you.

Zervos, Emmanuel
Thank you.

Pearce, Susan
Thank you.

Lea, Suzanne
Likewise.

Pearce, Susan
Take care.

Lea, Suzanne
Take care thanks a lot. Take care. Goodnight bye.

Christensen, Alan Jay
Goodnight