Rounding@IOWA: Cancer Rates in Iowa

[Upbeat theme music plays]

Transcript

00:00:05 Dr. Clancy

Welcome to Rounding at Iowa, a continuing medical education podcast developed by and for healthcare teams. I'm your host, Dr. Gerry Clancy, Professor of Psychiatry and Emergency Medicine and Senior Associate Dean for External Affairs here at the University of Iowa's Carver College of Medicine. Today we will discuss cancer trends across Iowa. Our objectives include the following. First, We want our participants to be able to accurately explain cancer trends in Iowa. Second, we want our participants to identify the known causes of these cancer rates in Iowa, and frankly, what we don't know at this time about cancer in Iowa. And third, we hope our participants can describe actions being taken to better understand these trends as well as cancer prevention measures. Today, we have the great advantage of two national cancer experts, Dr. Mary Charlton and Dr. Mark Burkard. Dr. Charlton is a professor of epidemiology at the University of Iowa College of Public Health, a health services researcher at the University of Iowa College of Public Health, and the director of the Iowa Cancer Registry. She is also the co-leader of the Cancer Epidemiology and Population Science Program at Holden Comprehensive Cancer Center and president of the Iowa Cancer Consortium, which has over 650 statewide members and is responsible for developing and implementing Iowa's cancer control plan through a contract with the Iowa Department of Health and Human Services. She earned a Bachelor's of Science in nursing, a master's degree in epidemiology, and a PhD all at the University of Iowa. She's also done training at Harvard School of Public Health, Northwestern University School of Medicine, and the University of Michigan. Dr. Mark Burkard is the Director of the University of Iowa Healthcare Holden Comprehensive Cancer Center. He serves as a professor in the Department of Internal Medicine in the Division of Hematology, Oncology, and Blood and Marrow Transplantation in the Carver College of Medicine. Dr. Burkardt earned his MD and PhD degrees at the University of Rochester. He completed residency training in internal medicine at New York Presbyterian Hospital's Cornell campus in New York City. And he trained in a fellowship in medical oncology at the Memorial Sloan Kettering Cancer Center in New York City. Dr. Burkard and Dr. Charlton, welcome to Rounding at Iowa.

00:02:19 Dr. Burkard

Thanks. It's great to be here.

00:02:20 Dr. Charlton

Yeah, thanks so much for having us.

00:02:22 Dr. Clancy

Well, we're glad you had the time to be able to talk to us today as well. Again, thank you for joining us and really for the important work that both of you do. I just provided our listeners your official titles and a summary of your training, but to get started and to let our listeners know a little bit more about you, how were you drawn to this work in the 1st place? And Dr. Charlton, let's start with you.

00:02:43 Dr. Charlton

Sure. Well, my favorite instructor during my master's program in epidemiology was Dr. Chuck Lynch. He was the PI of the Iowa Cancer Registry, and I was always so interested in his stories and his examples. that he generally always related to cancer epidemiology because he at the time was the director of the Iowa Cancer Registry. Then I worked as a research assistant in the Department of Family Medicine when I finished my master's degree and I worked on studies of cancer screening in rural areas, which really got me interested in the challenges of cancer prevention and control in rural populations. And then finally, my dad died of pancreatic cancer. And like everyone else, cancer has touched my life in numerous ways. So that combination of life experiences helped to lead me down my career path.

00:03:30 Dr. Clancy

Well, great. And I remember Dr. Lynch in medical school as well. He was fantastic. Yes. Dr. Burkardt, how about you? What drew you to this work?

00:03:39 Dr. Burkard

Growing up, I was always sort of a nerd into science. And then when I was doing my MD-PhD, I was looking for a branch of medicine that was advancing quickly, where discoveries in research were making material advances in improving care. And so that drove me to consider cancer as a focus for my career. And when I started my research career about 17 years ago now, after completing training, I had the opportunity to take care of patients with breast cancer and see and experience or empathize with what they were experiencing going through treatment and the promise and wonderful outcomes for most patients, but still the experience of losing lives to cancer when we, our current understanding wasn't

enough to make things better. And as I worked in the laboratory to improve that, I realized in order to have a bigger impact, you have to think on a larger level, not only then you could accomplish on taking care of the patient before you, or even on the lab experiments that you thought might one day, if you were lucky, lead to a breakthrough. But how you could bring discoveries of today to bear on larger populations. So I started working on regional molecular tumor boards across the state so that I could make sure that patients beyond my own clinic had access to cutting-edge discoveries and treatments. And then when I had an opportunity to come here to the University of Iowa to lead the Cancer Center, I discovered I had the ability to work with wonderful people who knew more about epidemiology and public health like Dr. Charlton, and began to learn and work with her and others to tackle cancer at a greater level at the origin. And so that was sort of my trajectory.

00:05:58 Dr. Clancy

Well, you both have just really honorable stories behind it. And really, you've come so far and cancer's come so far. So with all those things you do, could you give me an idea of what a work week might look like? And Mary, let's start with you.

00:06:15 Dr. Charlton

Sure. aside from the slew of meetings and emails that most people have to deal with in their daily work lives, I get to spend part of my week teaching students in a course called Public Health Surveillance, which is fun and very dynamic right now. Also, in terms of research and kind of outreach activities, I talk with people across Iowa as part of the Cancer in Iowa 99 Counties Project. So we plan meetings in partnership with the public health directors in each county in Iowa, and we present information on each county's cancer trends and rankings, as well as risk factors for their top cancers and resources that can be used to promote policies and activities to help reduce the burden of cancer in their community. That there, unfortunately or fortunately, is how you look at it, 99 counties. So it's taking us a while to get through all of those. So, but it's been great fun to meet people and travel across Iowa. I might run for governor when I'm done, but probably not. I also lead research in supporting rural hospitals across Iowa and enhancing the quality and comprehensiveness of the cancer care they offer to their patients. And then always keeping an eye on our cancer trends in Iowa, doing a lot of research around what's driving those and making sure we're putting out a lot of data and reports and tools for the public to explore.

00:07:37 Dr. Clancy

Well, it very. exciting job. You get to do a lot of things. And I can tell you, I know about the 99 counties as well, because I work with 99 different sheriff departments and 99 different

sets of county judges as well. So yes, sir. Mark, how about you? What's a work week look like for you?

00:07:56 Dr. Burkard

Well, every week's a little bit different. Last week I was traveling to the American Association of Cancer Institutes where I had the opportunity to kind of get a lay of the land, what's happening in other parts of the country and what are the other challenges other institutes are tracking. There was a lot of talk about how cancer funding is going this year and all the changes at the National Cancer Institute and how that is affecting the ability to plan. This week I'm spending some time working on writing

for our cancer center renewal. There's a lot of components of that. There's A slew of meetings to administer the cancer center. We're working on recruiting some clinical leaders and others. And I have the pleasure still on Thursdays to step out and take care of patients for the day, which is kind of a nice change of pace. And I have a research team in the laboratory with some new grad students. So I'm trying to help them move things forward. There's A rotating grad student and two current grad students and an MD-PhD student. And so it's a pleasure to spend some time working with them.

00:09:14 Dr. Clancy

Great, great. Mark, you really are a translational physician, aren't you? You work in the lab and you as well work with patients. And that's great.

00:09:23 Dr. Burkard

I used to work in the lab, but now I have grad students who do all the hard stuff.

00:09:30 Dr. Clancy

Before we get into cancer trends in Iowa, can we talk a little bit about the basics so that when we talk about those trends, we have a little bit more foundational knowledge. And so let's start, Mary, with the basics of epidemiology. What are some of the things you can, or you want a non-epidemiologist to know about epidemiology? And, you know, it's been a long time since I took an epidemiology course. So what are some of the basics that sometimes people forget about?

00:09:56 Dr. Charlton

Sure. epidemiology at its core is the study of patterns of disease in populations, not at the individual level. So to do this, we often look at the characteristics of populations and how they relate to things like the rate of cancer. So for example, we know that populations with higher rates of smoking also have higher rates of lung cancer. This can be frustrating to

individual cancer patients who want to know what caused their own particular cancer, such as a patient who never smoked but still got lung cancer. But the magic of epidemiology is that it can help identify risk factors before basic scientists have even determined how the risk factor causes disease. So again, for example, it was an epidemiologist who determined that smoking causes cancer, particularly lung cancer, decades before the exact chemical and mechanisms of how it causes cancer were established.

00:10:47 Dr. Clancy

Great. Mark, anything you want to add to that.

00:10:50 Dr. Burkard

I think of things more in a mechanistic biologic sense. And so when we're thinking about causes of cancer, at one level, you look at the epidemiology, but at another level, you look at how does it all work? And what we know is cancer is a genetic disease. And so things that cause DNA mutations, and I'm sure we're going to talk about plenty of them today, are some of the preeminent examples of causes. But there are other causes like viruses, inflammation, immune suppression. And so when someone comes to me with a new idea of a cause of cancer, I kind of put them through the list of mechanisms that I know and see, does that all hold together? It doesn't rule it in or rule it out, but it provides another type of evidence that helps move an association to causation.

00:11:47 Dr. Clancy

Sure, And Mary, I think this is going to be quite important as we come down the line as far as our questions. Can we just distinguish the difference between associations and direct cause and effect?

00:12:00 Dr. Charlton

Sure. This is a very important issue in epidemiologic studies, particularly when considering a disease as complex as cancer. Many epidemiologic studies find associations between specific risk factors and cancer, but far less are able to conclude that specific risk factors actually cause cancer. Causality typically requires that the exposure to the risk factor be at least somewhat precisely measured and that it definitively occur prior to the development of cancer, and that there is an established mechanism by which the risk factor could alter DNA or otherwise promote cancer. This can be extremely tricky as cancer can develop over decades and numerous risk factors work together to cause cancer. Also, we don't have a lot of biomarkers or longitudinal data on people's risks, which can change dramatically over time. So it's very difficult to prove causally that a particular factor causes cancer.

00:12:58 Dr. Clancy

Great, great. So Mark, with some of the pathophysiology of starting the growth of a cancer cell. We know a lot, don't we? I mean, can you explain to our audience how smoking interacts with our cells and initiates a cancer cell?

00:13:15 Dr. Burkard

Yeah, so tobacco smoke has mutagens, and those mutagens can intercalate into DNA and induce mutations into the DNA. And one thing people say as well, not everyone who smokes gets cancer. And it's true. If you put all of the cells in your lung at risk and you continuously mutate them at some elevated rate, if you're lucky, those mutations won't be in the genes that turn a healthy cell into cancer. But if you get that right residue in the KRAS gene, there's a good chance you are going to turn it into cancer. So I think you can explain a lot about the stochastic nature of cancer and the risk. And risk isn't a guarantee, but it's enough to say there's causation.

00:14:06 Dr. Clancy

Yeah, And a relatively new risk factor as far as cancer is now alcohol use. And do we know kind of the molecular biology of alcohol-inducing cancer cells?

00:14:22 Dr. Burkard

I have a harder time explaining this. I think it has more to do with chronic inflammation. I would say it's not that new. We knew, especially with head and neck cancer, where alcohol and tobacco synergize and the risks go up. I think what's new or more commonly understood is the association with many types of cancer.

00:14:43 Dr. Charlton

Is it okay if I add a couple of things? We happened to do a Cancer in Iowa report on alcohol-related cancers. So I learned a lot through doing that and that alcohol or acetaldehyde from alcohol directly damages the DNA. It also inhibits absorption of vitamins and nutrients that help repair DNA damage. And finally, in females, it can contribute to higher levels of estrogen, which can in turn increase risk for breast cancer. So those are three of the ways that it can work to contribute to cancer.

00:15:14 Dr. Clancy

Let's move on to the Cancer Registry, the Iowa Cancer Registry. Who's on your team and what do you cover within the Iowa Cancer Registry?

00:15:22 Dr. Charlton

Sure, well, we're really fortunate that the Iowa Cancer Registry is an original member of the National Cancer Institute's Surveillance Epidemiology and End Results, or SEER program. We've been collecting data, cancer surveillance data for over 50 years. Because we've had such good support over a long period of time, we're able to have a large team of oncology data specialists and IT professionals and epidemiologists at the registry, as well as a network of hospital-based cancer registries around the state from our larger hospitals. And in theory, we capture 100% of all cancers diagnosed among residents of Iowa. The only cancers we do not track are basal and squamous cell skin cancers because they are so common and are typically not ever fatal. We also then track all of those who have been diagnosed with cancer through the remainder of their lives so that we can capture critical data on survival.

00:16:20 Dr. Clancy

Mark, anything you want to add to the Iowa Cancer Registry.

00:16:23 Dr. Burkard

I would just say I've worked in many places in the US and it's a wonderful resource and Mary and her team do an incredible job. I have never worked in a place that had this much detail about cancer and the epidemiology.

00:16:38 Dr. Clancy

Yeah, one of our jewels of the state. So Mark, let's introduce the Holden Cancer Center and the National Cancer Institute designation that we have and what that means for Iowa.

00:16:49 Dr. Burkard

So about 50 years ago, a little more, the National Cancer Act was signed by Nixon. And that was signed to invest more in moving discoveries on cancer out of the lab into the clinic. The National Cancer Institute was one place where discoveries were being translated to lead to cures for pediatric leukemia and Hodgkin's lymphoma. And the idea was if there were more centers that integrate laboratory, clinical, and translational research, and population health science was also added to that, then these comprehensive centers could have a larger impact. So my predecessor, Dr. George Wiener, through great effort, through him and Dr. Lynch and teams of researchers here, were able to advance the University of Iowa Holden Cancer Center to the point where it met the requirements of NCI designation now 25 years ago. I have a letter outside my office that says December 1st, 2020. So December 1st, 2025 will be our 25th anniversary. And it's quite an accomplishment to get and

maintain that. And coming in here, 24 years after George accomplished that, it's big shoes to fill and a big lift to maintain. But again, we have a wonderful team of researchers and resources. and experts who carry on that mission. And I'm very happy to be part of the team.

00:18:21 Dr. Clancy

That's great. And what distinguishes a National Cancer Institute program compared to other cancer programs?

00:18:29 Dr. Burkard

So it does, has all the components. There's 6 essential components of a cancer center. Just to name one in particular is transdisciplinary collaboration. So just like I talked about originally, leukemia and Hodgkin's lymphoma were cured in the 60s and 70s through collaboration between scientists and clinical researchers and physicians. And so we have that ability. We have many examples of bringing research from the laboratory into the clinic. A preeminent example is the neuroendocrine spore, specialized program of research excellence. We are the only institution, university in the country that has this level of excellence in neurendocrine. And it's because People like Dawn Quell and Yosef Menda and Jim Howe bring discoveries out of the lab into the clinic to treat and improve neuroendocrine cancers. And at the next level, what brings us to the comprehensive level, rather than just the cancer center level, is the ability to integrate with epidemiology and population science. And that is an area where Mary is an important leader.

00:19:50 Dr. Clancy

Sure. Mary, anything you want to add?

00:19:53 Dr. Charlton

Nope, I think he covered it all.

00:19:54 Dr. Clancy

Yeah, he did. He did. So let's move on to what's happening regarding cancer trends across the US and Iowa. Let's start with how is this research done? How are we conducting the research and tracking what's going on in Iowa?

00:20:07 Dr. Charlton

Sure. So we primarily use. Our cancer data collected by the Iowa Cancer Registry, which is so important, I have to say, can't say enough about the importance of having that 100% capture of cancer cases and having it for all 50 states, which are largely federally funded

through either the National Cancer Institute or the Centers for Disease Control. So that's kind of the key primary source. So we're using our own registry data. We're comparing our rates and trends to the rest of the country. And then we're also using data from the CDC's Behavioral Risk Factors Surveillance System and socio-demographic factors from the American Community Survey, which is part of the US Census Bureau. So those are our primary data sets. And we're looking at the trends themselves. And we always look at age-adjusted trends when we do this. so that we can compare apples to apples. And many states or parts of Iowa have younger populations. And as we all know, cancer is largely a disease, not 100%, but largely a disease of aging populations. So we kind of force everybody to have the same population distribution, and that lets us compare rates. And then we can kind of figure out where are we rising or not declining as quickly as other places in the country.

00:21:20 Dr. Clancy

So what stands out to you about Iowa's cancer rates right now?

00:21:26 Dr. Charlton

Yeah, so they're quite high. That's what stands out is kind of depending on the time period you're looking at. Overall, though, we have the second highest cancer rate in the country and are usually the only state that's had a consistently rising rate of new cancers over the past several years where other states have largely flattened out or declining. The other kind of really concerning thing is it's not just one or two or three types of cancer that cause our high rates. We rank in the top 15 states with some of the highest rates of almost all types of common cancers. So it's not just certain ones, although we do, we rank first in the country for oropharyngeal cancer, non-Hodgkin's lymphoma, leukemia. We rank second in the country for melanoma, 5th for esophageal cancer, 6th for endometrial, 7th for colorectal, bladder, kidney, 10th for lung cancer, and so on. So that's kind of the hard part is every cancer has different risk factors. So trying to figure out why we're high across the board has been challenging.

00:22:32 Dr. Clancy

Mark, how about you? What stood out as you came from Wisconsin to Iowa and really took on this challenge?

00:22:40 Dr. Burkard

Well, I didn't have really a good sense of why Iowa would be #2 in cancer rates. As Mary said, it's multifactorial. I remember discussing with a group of senior faculty in the basic research department before I left Wisconsin. And they all said, well, that's interesting. But

again, there was a lot of speculation about why that is. And as Mary has said time and again, and I totally follow and agree with this, it's not a simple one factor. to explain it all. It's multifactorial.

00:23:22 Dr. Clancy

You know, I had to deal with something similar in the field of psychiatry. There's always someone trying to come up with the one cause of a mental illness. And it's human nature. We call it reductionism, trying to simplify a very complex subject and boil it down to just a few pieces. And sometimes you just can't do it. You really can't. Mary, you talked about which types of cancer are outliers. Nationally, what are our leading causes of cancer and how does that compare to Iowa?

00:23:51 Dr. Charlton

Yeah, we have pretty similar top causes of cancer to the rest of the country, which would be prostate, breast, lung, colorectal, and melanoma are our top five. But our rates, it's really prostate, breast, melanoma that are increasing faster than those rates in the rest of the country. And the most concerning to me is the, we have very slow decline in lung cancer compared to the rest of the country. It's almost flattening out in some populations. And in some of these 99 counties presentations I give, it's actually increasing. in certain counties in Iowa, which is almost unheard of for the rest of the country. So if you remove all those cancers from the equation and you rerun our trends, we're quite a bit more flat and less concerning. But again, that's not to say we're not high in lots of different cancers and lots of things are driving it, but those are really the top ones.

00:24:45 Dr. Clancy

Great, great. So kind of the hardest question of the set of questions that I sent you, what are you seeing as possibly the leading causes of these cancers?

00:24:56 Dr. Charlton

Yeah, that is a tricky one. We know from lots of studies that approximately 40% of cancers can be attributable to lifestyle factors like smoking and tobacco, obesity, physical inactivity, poor diet, ultraviolet radiation from the sun, Other very important causes also include exposure to environmental factors, including things like radon, arsenic, or other potential agricultural exposures, like people are very concerned about here in Iowa, as well as genetics and family history. And that's really hard data to incorporate into our analyses. But we do know, it's not very sexy to say that lifestyle matters a lot, but it does matter. I mean, Utah is a state with one of the lowest cancer rates in the country. And by and large, given their culture there, They have very low smoking rates, very low drinking rates, very

high activity rates, outside, being active, eating a relatively healthy diet, and they have a very low cancer rate. So it's not the only thing that matters, and it works together with environmental and genetic factors to be sure, but it does matter. And I think that sometimes gets lost in the discussion of what's causing all the cancer here in Iowa.

00:26:13 Dr. Clancy

Sure. Mark, anything?

00:26:14 Dr. Burkard

Yeah, I would say when we're talking about causes of cancer, we're talking about factors, but we're not necessarily clearly explaining the degrees to which those factors contribute. If we talked about the degree they contribute in proportion to the time we talked, we spend most of our time talking about tobacco, because that is clearly by far the major contributor to cancer rates. Of course, cancer strikes people who've never smoked or chewed tobacco. And so it's not the only cause, but that is the number one contributor. And some of the things we talk about as carcinogenic are true cancer causing, but have much smaller contributions.

00:26:59 Dr. Clancy

Sure. And, you know, I grew up in Iowa in a basement. Iowa is a higher radon state as well. So, and there's things you can do about that. So when, reporters ask questions such as, why are Iowa's cancer rates increasing? Is it just too early to tell or do we have some answers at least?

00:27:22 Dr. Charlton

Yeah. I mean, it's a pretty unsatisfying answer that I have to give to everybody. But, you know, again, I think it's this mountain of pebbles here. We still have high smoking rates that are not coming down like they are in other states. We have the third highest rate of binge drinking in the country. We are in the top 10 most obese states, and we only have 1/4 of our population who report meeting physical activity guidelines, and 1/4 of our population who report 0 physical activity whatsoever. Less than 1/4 of our population reports eating anything close to a recommended number of servings of fruits and vegetables, with a quarter, about 1/4 eating like 0 servings of fruit per day. Iowa also has the highest exposure to radon of any U.S. state, as you mentioned, thanks to the limestone that our land sits on. top of that, we do have unique levels of agricultural exposures compared to other states. But what is clear to me from the very different geographic patterns we see for each type of cancer in Iowa is that there is no one thing causing all the cancer. For example, we see the highest rates of breast cancer in our urban areas, the highest rates of colorectal cancer in

the rural areas, higher rates of melanoma in our northern counties. and higher rates of lung cancer in our southern counties. And prostate cancer appears to be highest in our western counties. So all very different patterns, which point to a kind of complicated mix of risk factors.

00:28:49 Dr. Clancy

Are there new things that you're investigating as far as possible causes as well? Is there other things on the list that you'd like to look into a little bit more in depth?

00:29:01 Dr. Charlton

Yeah, the thing on people's minds here in Iowa is the water quality, like the nitrates in the water and pesticides and how all those things sort of work together. And we absolutely want to contribute to understanding and quantifying the impact of that. So we do partners. The Iowa Cancer Registry itself is not a research center. You know, we are a surveillance operation. And like I said earlier, we're made-up of health records technicians and nurses. And it might not sound that complicated, but we We collect hundreds of variables on every type of cancer and every case of cancer here in Iowa. But we do partner with researchers like the National Cancer Institute's Agricultural Health Study. And that is one of the most world-renowned landmark studies on quantifying the risk of exposure to things like pesticides in our most highly exposed population, which are our farmers. So they enrolled over 30,000 pesticide applicators, predominantly farmers, back in the 90s. That was, again, Chuck Lynch, my mentor, who's the site PI here in Iowa. And they follow them forward for decades. And they poke and prod them and send them surveys, and they try to capture all those other things we talked about that are risk factors for cancer. So they can account for the known risk factors while they quantify the risk. And those farmers are very good at detailing exactly which types of pesticides they're using. pesticides constitute thousands of chemicals, and the mix of pesticides people use change over time. So it takes a lot, it takes a huge study like that to be able to really accurately document those things, account for the other known causes of cancer, and then estimate the risk. So we provide our data to that study so they know who gets cancer, what types of cancer they get, and how long they live. So we work closely with them and lots of other researchers who are trying to examine different sort of environmental and agricultural risk factors. But again, the problem is we don't have great biomarkers. Like things with arsenic, they've figured out they can detect them in your toenails. So you might get asked to be in a study where they ask you to send your toenails in and they can do some measurements. But by and large, we don't, you know, for people who live next door to farms or down the road from farms, we don't have a very good way of quantifying those people's exposure. And we also know that people drink from multiple water sources over the course of their lives and the cancer's

taking 10, 20, 30 years to develop. So that's why it's really tricky. Doesn't mean we shouldn't do it. Doesn't mean we shouldn't try. And we're trying to be good partners with our data and all those studies. But, you know, that's really where I think the interest, particularly among Iowans, is. It's just a long slog to be able to study that.

00:31:40 Dr. Clancy

Mark, what areas would you hope that we can at least further explore?

00:31:46 Dr. Burkard

I'm concerned we could end up on a wild goose chase and not learn anything. the pesticides of the 1990s aren't necessarily the ones we use today. And Mary, correct me if I'm wrong, but what we saw in the agricultural health study is the effects of tobacco use swapped out any possible effect of pesticides, and it wasn't clear whether applicators really did have higher rates. So I think we have to be very cautious about how we approach the unknown. Anytime you have a hypothesis, when I write a grant to the NCI and have a hypothesis, I better have a reasonable idea and understanding that is foundational. Otherwise, you end up on a wild goose chase and could put a lot of effort into studying things with no impact. And so one of the things we've done is we did want some external experts to take a look at our data and our outcomes. Natasha Askelson, one of the other faculty leaders in the College of Public Health and in the Cancer Center, has led what we're terming a blue ribbon panel of internationally renowned experts who had expertise in different cancers and different causes and looked at our data and tried to give us some advice. And I would say we didn't get a single direction, but we got some pieces of information that were interesting. For example, they reminded us that the data, what we're seeing now is the effect of 10, 20 years ago exposures. And so studying or reversing exposures today may not reveal that. And Mary echoed that by talking about how water sources change over time.

00:33:27 Dr. Clancy

Sure. So, you know, both of your answers, I thought of something I learned early in med school was that When you hear hoof beats, think horses, not zebras. And so we know certain things are out there that are causes for sure. And there's other things that might be, but the things that have caused cancer for decades are still out there causing cancer. Let's move over to prevention and early interventions. What is the cancer control planning effort and the cancer control plan itself?

00:33:57 Dr. Charlton

Sure, I can take that one. So the Iowa Cancer Consortium is a statewide coalition of more than 700 people and organizations collaborating for cancer prevention, early detection, treatment, quality of life, and equity. And the consortium works across that membership to develop and support the implementation of the Iowa Cancer Plan, which is a roadmap for a reduced burden of cancer in Iowa. It provides direction and support for those who want to work towards reducing the burden of cancer and encompasses the entire cancer control continuum, including actions to reduce the risk of developing cancer or finding cancer early, all the way through treatment and survivorship care. So if you look specifically at the prevention and risk reduction section, you'll see priorities like reducing exposure to tobacco and secondhand smoke, enhance opportunities for Iowans to access nutritious foods and be physically active, decrease alcohol consumption, increase immunization rates, and so on. And it provides a wealth of really good evidence-based interventions that can be done at the individual level, at the provider level, at the community level, workplace, and all the way up through state level policies.

00:35:08 Dr. Clancy

So for those healthcare clinicians listening, what guidance do both of you have for them in working with their patients on cancer prevention and early intervention? This is a big area, but I think it's important to cover the waterfront on that. Mark, you want to start with that one.

00:35:26 Dr. Burkard

Boy, that's tough because changing behaviors is difficult, as you well know. I think it would be fair to say that we should all remind our patients about cancer risk factors, smoking, alcohol, obesity, encourage people to do the right things. I think HPV vaccination is a really important one. There's all kinds of, talk about vaccinations, but that can prevent cancer and save lives as probably one of the simplest interventions I'd like to see to eliminate many oropharyngeal, most cervical cancers, penile cancers. You could do a lot of prevention if we deliver on that.

00:36:12 Dr. Clancy

Mary, you've been doing this a while in Iowa. What's your guidance for the Iowa clinicians on turning around our numbers?

00:36:18 Dr. Charlton

Yeah, I think Mark covered a lot of it. Before I get into like kind of the individual physician or provider type interventions, you know, really advocating on a state level, we do not behave like a state that has the second highest cancer incidence rate in the country. We do not have the types of policies that would make it easier to do the healthy things and harder to do the unhealthy things. For example, we've not raised our tobacco tax since 2007, and that's one of the single most effective prevention, public health prevention interventions there is. So that would be really important. We use just a pittance of the tobacco settlement dollars to actually help prevent kids and youth from starting to smoke and helping people to quit smoking. And we still, you know, we don't let our minors drink, and we don't let our minors buy cigarettes, but we do let them cook themselves to their heart's content in a tanning bed with no restrictions whatsoever. We're one of the few states that just has nothing. No restrictions, no parental permission required, nothing. So we have a long way to go on policies that could really help people we've left people to their individual behaviors all this time, and it's gotten us to the second highest cancer rate in the country. So I think there's a lot more we need to be doing policy-wise. Mark covered a lot of the things on a provider level, but again, like really talking to people about their tobacco and nicotine use. There's all kinds of new products out there, and we tend to think of them very negatively because they might get more people to start using nicotine than ever would have, and those people might go on to smoke. So it's important to counsel people on that, but also I guess, almost as importantly for people who are smoking, maybe there's other alternatives that they could try, establish smoking cessation types of interventions along with their, there are less. less risky products on the market. So really being familiar with a lot of those and be able to talk to patients about those to at least minimize their risk to the extent possible if they're not going to totally quit. Even just recommending to patients that they test their homes for radon, they might really listen to that coming from a physician. And that's really important as it's the number one cause of lung cancer among non-smokers. Again, like really talking to their patients about reducing their exposure to ultraviolet light. We have a very high rate of melanoma in Iowa. higher than any of the Sunbelt states. We have a higher rate of melanoma than California, Florida, anywhere down there, and it's increasing at a very, very rapid rate. So being aggressive at talking to people about that. Counseling patients on reducing or never starting alcohol use. I know, you know, in Iowa here, it's a big part of the culture, and, you know, I'm not sort of naive to think everybody will just be able to quit drinking. There's certainly social benefits of using alcohol, but really kind of, you know, can you have one less on occasion? or really counseling people to think about it because there is no safe amount of alcohol when it comes to cancer risk. And after doing that report that we put out about alcohol and cancer,

I used to reward myself with a glass of wine while I did emails at night. Like that was my reward to keep working after the kids went to bed. And there's no social benefits from drinking alone. So that's one change I made is I never drink alone. I will have, you know, drink in moderation with friends from time to time, but there's just lots of different things people can do to reduce their risk. And I think they'd really it would mean a lot coming from their provider. Again, vaccinations, like Mark mentioned, and really helping them stay up to date on cancer screenings. We're pretty high in Iowa on cancer screenings. We do pretty well, but lung cancer screening is just abysmal in all 50 states. It's not well used by patients. It really could help detect lung cancer early when it's still treatable and not as fatal. So I think that's one where we just have a ton of opportunity for improvement as we only think about 17% of eligible people are getting lung cancer screening.

00:40:09 Dr. Clancy

We've got to put better systems in place for that. Absolutely. Yep. You know, I'm developing a grand rounds here in the college around rebuilding trust in American medicine. And as I'm doing this grand rounds, I continue to see that most respected and trustworthy professions continue to be nurses, pharmacists and physicians. So The clinician's voice does matter in these things, and you both highlighted that really strongly.

00:40:40 Dr. Charlton

Oh, and one I forgot. Sorry, I'll get in trouble if I don't say it. exercise or physical activity is like the fifth vital sign, when you're looking at all those, really asking them about their activity level, exercise, just anything is better than nothing. And like I said, we have 1/4 of the people in Iowa reporting zero physical activity whatsoever outside of their job. So that's something that I think providers could also really help encourage.

00:41:05 Dr. Clancy

Great, great.

Mark, have you been here a year?

00:41:08 Dr. Clancy

Is it?

00:41:08 Dr. Burkard

A year.

00:41:11 Dr. Clancy

And so, you've had some time to kind of put together at least a preliminary plan. So what do you see as far as the future of cancer research in Iowa? What's on the horizon for us?

00:41:23 Dr. Burkard

Well, I think there's a lot to do. We're in this world where the cancer landscape is changing rapidly. And we have to think about how we're going to take that and apply it to populations that don't have ready access to our Iowa City resources or physicians. And so what we're thinking about is how to reach more rural communities. And one idea that I'm excited about that follows up on what Mary said about lung cancer screening is led by Jill Kolesar and Corey Kinialty in the College of Pharmacy, where they are using the community pharmacists they have a network of community pharmacists. who can help improve lung cancer screening. And the idea here is to have the pharmacist ask the key questions about pack years of history and age of the people in the community they know and refer them to lung cancer screening. And the innovation part, you know, what that I alluded to, comes from these new blood tests that can detect DNA fragmentation patterns that are characteristic of cancer. And so into that screening program, not only does it employ the standard low dose CT, but it also is implementing a novel blood test that could make things more efficient and easier for patients.

00:42:59 Dr. Clancy

Really good stuff.

00:42:59 Dr. Charlton

Good stuff.

00:43:00 Dr. Clancy

Mary, what do you see on the horizon?

00:43:02 Dr. Charlton

I see, hopefully, that people, you know, getting a better understanding of the way that these cancer risk factors work together. we talked about smoking and radon. Boy, if you smoke and you have radon in your home, you have an exponentially higher risk of getting cancer. There's lots of things like that where these risk factors work together and really going at them one at a time is not kind of getting us to the solution very well. So, you know, research wise, I think we need to really be able to take in the complexity of cancer when we're doing that type of research. And then I think public health wise or healthcare wise, check even if you're not from Iowa, check out our Iowa Cancer Plan. It's kind of the envy of

the nation. It's got all these evidence-based practices. You don't have to come up with the solution by yourself. And it's a way to really address multiple risk factors at once and really give your patients the best shot at reducing the risk and having a good quality of life. And it's got provider materials, patient education materials, all kinds of things. So really take advantage of the resources either in our plan or the plan in your own state or country and just start somewhere, you know, just start somewhere to help start turning things around.

00:44:16 Dr. Clancy

Yeah, and I just highlight, you know, as you said, it's a living document. It's updated very regularly and it's as fresh and full of information as you can get. Yeah, it's really good stuff. So as we close, what are some of the take-home points you'd like to leave with our listeners? And Mark, we'll start with you. Well, that cancer risk has multiple factors. It's not simple. That we can speculate on new causes that are not well established, but there should be some underlying mechanism or reason to suspect them before going in and doing a lot of detailed investigation, that we have some but only partial control over whether or not we will get cancer. You know, if you live long enough, there's a good chance you will. We didn't talk about screening, but of course, screening increases rates of cancer, but it improves mortality in certain cases. And the most important thing we can encourage in populations is to eliminate tobacco. And probably the most important thing for providers is encourage good health behaviors and vaccines that prevent cancer.

00:45:36 Dr. Clancy

Mary, how about you? And it's okay to double what Mark said.

00:45:41 Dr. Charlton

Yeah, well, whatever areas you want. I think Mark took most of mine. So echo what he says. And also, you know, providers are some of the most trusted people that a lot of these people will come in contact with. I can't say enough, I know being on the front lines must be really overwhelming with all the different health problems that need to be taken care of in a very short visit. But really, hearing strong recommendations from their providers on those vaccines, on the screenings, on the risk reduction can go about as far as anything else that we know of. And, a lot of patients, like I said, here in Iowa, people are frustrated. They want to know why they got cancer. It's a really hard It's a really hard question. people get upset like, hey, I never drank and you keep talking about alcohol and those types of things. So I get that. But again, providers on the front lines can do the best at really coaching people on risk reduction. We'll do our part in public health for populations and getting information out there. But I think it's going to take all of us working together to really

start to reduce the burden of cancer in Iowa and in other parts of the country and the world.

00:46:50 Dr. Clancy

You both are great in the work you do and your commitment to Iowa. So to our expert guests, Dr. Mary Charlton and Dr. Mark Burkard, thank you for joining us on Rounding It Iowa and for the work you've done in understanding cancer in Iowa and the work you're going to do. So thank you. For our listeners, you can access instructions for CME and CBUs within our show notes. And as usual, we hope you'll join us again for another session of Rounding@IOWA.