

## **Transcript for Grace Ryan Podcast \_ published on Oct. 5, 2023**

### **Valuable insight from the HPV and COVID-19 vaccine rollouts**

Grace Ryan, PhD, assistant professor of population & quantitative health sciences, discusses her research into vaccine hesitancy, particularly the parallels between the Human Papillomavirus (HPV) and COVID-19 vaccines rollout.

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#### **Voice over artist**

Thanks you for listening to the Voices of UMass Chan, featuring the people, ideas and advances of UMass Chan Medical School.

#### **Jennifer Berryman**

From UMass Chan Medical School, this is the Voices of UMass Chan podcast. I'm your host Jennifer Berryman. While the COVID-19 pandemic led to the rapid development of new vaccines, it also revealed widespread challenges related to vaccine hesitancy. The pandemic may have brought vaccine hesitancy to the spotlight. But the ripple effects are continuing long past the pandemic.

Our guest today is Grace Ryan. She just finished her postdoctoral UMass Chan and is now an assistant professor of population and quantitative health sciences. Grace's research is focused on HPV vaccine delivery in rural areas along with the COVID-19 vaccine rollout. So, Grace, thanks so much for making time to talk with us.

#### **Grace Ryan**

Yeah, absolutely. Thank you for having me.

#### **Jennifer Berryman**

Of course. So COVID-19, HPV, two vaccines for very different illnesses. Can you just remind our listeners who might have forgotten what is HPV? What is it targeted to prevent? And then talk about how you're looking at both of these vaccines in concert?

#### **Grace Ryan**

That's a great question. HPV, or Human Papillomavirus, is an extremely common virus that's spread through contact with another person. It's something that nearly every single person comes into contact within their life. And in some cases, it can develop into cancers. Those cancers often lead to cervical cancer, anal cancer, penile cancer. So, it affects both males and females. But we have a vaccine that can prevent almost 90 percent of those cancers from developing. And it's important to give that vaccine when kids are younger. We recommend it for ages 11 to 12. But we can start that series as early as age nine or 10. And it's a vaccine that has faced some resistance in the past, similar to the COVID vaccine. There have been some conversations around hesitancy for these vaccines, and how should I say this-- the politicization of the conversations around

those vaccines. And they're also two of the newer vaccines that we've developed that have had mass rollouts. So, most of my research, like you said, has been around HPV vaccination. And I've done a lot of work on HPV vaccine delivery and communication about the HPV vaccine in health care settings. And when I started my postdoc, it was sort of just as the COVID-19 vaccine was starting to roll out for the adolescent and pediatric population. And as I was thinking about it and talking to my mentors and colleagues here, we started talking about the similarities between these two vaccines, first in the resistance that they've faced. They're also both multi-dose series, which presents a little bit of a different challenge for getting those vaccines into kids, just because of the logistics involved. And they are also two vaccines that likely won't, other than a few cases here and there are not going to have mandates to support them. So they're not going to be school entry-required vaccines. And often, we see a pretty big discrepancy with the vaccines that are required for school entry. We see those that have pretty high rates across the country, and then those vaccines that sometimes get presented as more optional to parents have much lower rates of uptake. So we started thinking about these two vaccines in concert sort of for all of those reasons.

### **Jennifer Berryman**

So, when you hear from parents or when health care providers, hear from parents expressing hesitancy about HPV, what are they typically saying? Do they express why they're hesitant?

### **Grace Ryan**

There are a lot of reasons. And a lot of our work focuses on understanding that at their very heart, parents just want to make the best decisions for their kids. And that's what pediatricians want too. And so, these conversations can get very challenging. Because you're trying to make the best decision. We have such wonderful evidence that the HPV vaccine is extremely effective. But there is still hesitancy around it, like you said, that has certainly evolved. When the HPV vaccine rolled out in 2007, a lot of the messaging around it was that HPV is a sexually transmitted infection. In many cases. And when we rolled out the vaccine. I think a lot of our communication was around preventing a sexually transmitted infection. And there's been a lot of research over the last decade that has shown that communicating about it as a cancer prevention vaccine is a much better way to talk about it to parents. Because at its heart, that's what it is. It's preventing cancers that can develop later in life. While HPV is a sexually transmitted infection, it's one that, like I said, almost everybody is going to come into contact with. It's so widespread. And it also causes, not just sexually transmitted infections, but warts and things like that. It's just a very common thing. And so, talking about it as preventing cancer really mitigate some of those parents' hesitancy when they have thought about it as being, well, my kid doesn't need that yet. They're not sexually active.

So, we try, and steer the conversation a little bit away from that. We have recently seen a rise in parents' concerns about side effects of vaccines. And that's a little concerning to us. Because these vaccines are so well-studied. And we know that there are very minimal side effects other than a few cases, which we know is going to happen, through the clinical trials we do, we know that some children are going to have a reaction, usually very small reaction to the vaccine. But there does seem to be increased talk of that in parents and what hesitancy that they are reporting around.

### **Jennifer Berryman**

Really interesting. And as you say, the HPV vaccine has been shown to be more than 90 percent effective in preventing cancers that can be caused by that virus. So, I want to just go a little bit deeper

on your research into vaccine hesitancy. Because you focused on rural health care settings. I guess I'm curious why it's so important to understand how certain populations or certain demographics or certain regions will respond to vaccines suggestions?

**Grace Ryan**

Absolutely. So rural/urban disparities are one where we see a lot of inequity in vaccination rates, particularly for HPV. We've started to see it for the COVID vaccine as well. And we see it to a lesser extent for some of the other vaccines. But we still do see that rural communities tend to get vaccinated at lower rates.

For HPV, we also see that rural communities have much higher rates of HPV-associated cancers. And the morbidity and mortality for that is much higher in these rural areas. So it's really important to think about inequities, sort of from all respects-- from geography, from race and ethnicity, and approach it from every angle. My interest in rural health grew from my time at the University of Iowa. Iowa is a very rural state. So, I became involved in it and think it's interesting. And I think it's an important problem to tackle. Because it's one that's sort of multi-level.

There are some real logistical challenges in getting vaccines in rural areas. When you might live 25 - 35 minutes from your provider, sometimes even longer, that's a big trip if you're a parent and you have four little kids and you're going back and forth trying to get them to the doctor all the time. You might just not be able to prioritize that vaccine visit. We saw it in the COVID rollout, even here in Massachusetts, which people don't think of as being a particularly rural state. Those counties in Western Massachusetts and even the Cape and islands had some real logistical challenges in getting the COVID vaccine delivered and still have those challenges unfortunately. We see much lower rates here around that.

**Jennifer Berryman**

So, from the perspective of health care providers, are there tactics that they can use to help tackle that and make it more equitable and provide access to a greater number of people?

**Grace Ryan**

Absolutely. The health providers are one of, obviously, the most important and sort of critical pieces in this chain of getting vaccines into getting shots into kid's arms. One of the best strategies health care providers can use, and this would be for rural areas or urban areas, is to use what's called a strong and presumptive recommendation for vaccination. So, this would sound something like saying, I see your child is due for the COVID-19 vaccine today. We can do that in the clinic right now. And I strongly recommend it as the best way to prevent your child from getting seriously sick. So, you hear two things in there. You hear the provider saying we can do this sort of giving the parent the time to say like, no. I don't want you to, but saying this is the default. This is what we're going to do. And to add to that piece of I strongly recommend it to protect your child. So that is one of the best ways and research has shown that for the HPV vaccine, for the COVID vaccine for both adults and children, as one of the best ways to communicate from a health care provider perspective.

**Jennifer Berryman**

What are some of the similarities that you have found between rollout of the HPV vaccine, which I think you said started around 2007, and then the COVID-19 vaccines, which of course, started in early 2021?

**Grace Ryan**

They're both vaccines that have faced some more particular kind of hesitancy that's, I think, around how we've communicated about them and the attention that's been paid to them. And because neither of them was rolled out as school-mandated vaccines, a lot of times we found that, especially in the early-- for both providers-- like I said, we're talking about them as more optional vaccines. And I think that can be detrimental. And that brings in the strong provider recommendation piece that when providers talk about them as just part of the routine vaccines that kids need to get or that adults need to get, it is a much better way to market to them. We did a survey of pediatricians in Massachusetts that we partnered with the Massachusetts chapter for the American Academy of Pediatrics on to get responses from pediatricians across the state. And these are two vaccines that pediatricians still report having some level of trouble communicating about. There's something there that they don't feel totally confident in addressing parental hesitancy. And that's likely because this is a very complex topic. And we know pediatricians have such limited time to talk to parents a lot of the time. They're trying to tackle so many issues in one single visit. And so, it makes sense that talking about everything that they need to plus vaccines is going to take a while. But there's clearly something about both of them that pediatricians need better strategies in how to talk about these vaccines, whether it's using the strong and presumptive recommendation, and then likely given the increased vaccine hesitancy that we're seeing across the board, probably a little extra support on top of that.

**Jennifer Berryman**

How many pediatricians across the state were involved in that survey?

**Grace Ryan**

We ended up with about, I think it was 109 responses across the state. Most of those responses were focused in the Worcester area and the Boston area. We had a little more trouble reaching pediatricians in rural areas. We also know there are a lot fewer pediatricians in rural areas. It tends to be family practice and internal medicine doctors who are seeing kids out there. So certainly not representative of everybody. But we think we got a pretty good idea of a pulse of what's going on with vaccine hesitancy in the state right now.

**Jennifer Berryman**

So, the next step that you're taking in the search, as I understand it, is to launch a new pilot study at Baystate Health. That's located in Springfield, Massachusetts. And by the way, Baystate Health also happens to be the site of UMass Chan's first regional campus for the T. H. Chan School of Medicine. If you could just tell us about this pilot study.

**Grace Ryan**

I think it's designed to better support pediatricians and clinics like you're talking about. So, what are you intending to do there?

Exactly. We're really excited about this collaboration with colleagues at Baystate. This has been a project we've been talking about for a while. And it really grew out of our work during the COVID-19 pandemic to support pediatricians. Our team through the PRC at UMass Chan, the Prevention Research Center, we received funding during COVID to tackle vaccine confidence specifically focused on children and families.

And I led a piece to think about how we can support pediatricians. And we developed a small intervention that we talk about as being really low touch. Our goal was to do something that would not be a heavy lift for providers or for office staff. We know they're so overburdened. We wanted to figure

out some strategic and evidence-based ways to support them. And so we are now-- we did a small pilot with just the Benedict Clinic at UMass. And now we are doing this more robust cluster randomized trial we have four clinics involved right now. Two are in the intervention. And two will be in the control or the delayed intervention group. And basically, at its heart, it's a webinar training for providers with some strategies on how to have these conversations about vaccination. We have combined using the strong and presumptive recommendation approach with two other evidence-based strategies. And that is using motivational interviewing, which is a style of communication that's meant to be very collaborative and to elicit personal motivations for change through this very accepting and empathetic environment. It's really drawing on working with pediatricians to draw out what parents' different hesitations might be and having conversations about those individually. And then the third piece is having providers integrate some more personal stories or personal experiences about vaccination. We found early in our research on COVID in the Worcester Community that parents want to hear that providers have gotten their own kids vaccinated. They want to hear that they trust this vaccine. And there's research that shows that that's true for other vaccines as well. It's really taking these three strategies of a strong and presumptive recommendation combined with motivational interviewing and personal vaccine stories. And so, we have a webinar training that our team has done, and we do that with the providers at the clinics.

**Jennifer Berryman**

Can you give us an idea of what motivational interviewing is like? What would that conversation be like?

**Grace Ryan**

Our recommendation is that you start with the strong recommendation and then sort of wait to see how parents react to that. Do they have some questions? Do they outright say, I'd really rather not get my kid vaccinated today? And then you go from there. And what you might ask is, is it OK if I ask you why you feel this way? Can you tell me a little bit more about that? And really, the goal is to have this collaborative conversation where you are trying to draw out how a parent feels about it. One strategy that we talk about is, for example, asking a parent, well, on a scale of one to 10, how ready are you to get your kid vaccinated? And if they say probably only like a two or a three, then you ask them, OK, well, can you tell me why you're at a three and maybe not a one? Clearly, there's a little part-- there's something there that's making you more interested in this. Can you tell me why that is? And you sort of move through this incremental process. And one of the things that we emphasize is that these conversations might not just happen once. They might happen over a series of visits with that parent one of the things about many pediatricians, especially in community practices, is they have really long-standing relationships with those parents. They are people that they trust. And so, these conversations and our approach is really designed to build on that positive relationship and not to detract from it in any way. And so, the goal is, well, moving parents closer to vaccine acceptance really having it be a decision that they know is in their hands to make.

**Jennifer Berryman**

I have so many questions. Where are we in the Commonwealth of Massachusetts in terms of vaccine compliance either with COVID or HPV?

**Grace Ryan**

For COVID,-19 it's gotten a little tricky to track. We're doing it in real time. We're getting data and responding to it. So, we have good numbers right now for the state for where we're at with completing the primary series, which would be either one or two doses of whatever the primary vaccine is but not

receiving a booster. And right now, only about 45 percent of 12 to 15-year-olds completed that primary series.

**Jennifer Berryman**

Really?

**Grace Ryan**

So, 45 percent of those kids haven't gotten the recommended booster. I think overall, it's somewhere around 60 percent of the population have completed their series but not received a booster. So, we definitely have a ways to go, especially as we're going to continue, I think, to see regular boosters on a yearly basis. Massachusetts is overall a very vaccine-accepting state. But we see pockets of the populations that have much lower rates that think a little bit get hidden in those high rates that we see everywhere. And so, when we think about Massachusetts not needing as much support, I think that we're sort of a little remiss to say that.

**Jennifer Berryman**

So, Grace, I guess I'm interested in your studying of these two vaccines, in particular COVID-19 and HPV. Are you concerned?

that hesitancy for those vaccines might be spilling over into other vaccines?

**Grace Ryan**

That's a really great question. And it's something that I've been thinking a lot and I know that others who are working in this field are thinking about a lot and are really concerned about. We have absolutely seen increased hesitancy in the wake of the COVID-19 pandemic. In the survey that I referenced earlier, about 11 percent of the pediatricians said that they've seen increased hesitancy around the HPV vaccine just here in our state. And this is an issue that I don't want to say that it's all about the COVID-19 pandemic. In 2019, the WHO, World Health Organization, declared vaccine hesitancy one of the top 10 threats to global health. And I think we saw how that played out over the last few years in terms of the excess morbidity and mortality from COVID-19 after the vaccine was introduced. And certainly, There are known worldwide equity issues with that contributed as well.

But I think we're in a critical moment for this right now. And we really need to pay attention to how we're communicating about vaccines, how we're combating misinformation and disinformation on social media, and how we're going to address it going forward.

We're at this critical moment. We're also at an exciting time where we have so many great technological advances in vaccine research many of which I think are happening right here at UMass. We have researchers working on a Lyme disease vaccine and a gonorrhea vaccine, which is just so amazing when we think about that, we're going to be able to stop those viruses and stop those diseases from the start. But we're going to also need to build overall vaccine confidence. And so, a lot of my work is thinking about how can we focus on these vaccines specifically? But also how can we build better overall confidence among parents in our communities so that they are more accepting of vaccines, so that we know how to communicate with them better, and so that we can really help them make the decisions that are best for their children in the long run and work with them on that?

**Jennifer Berryman**

Grace Ryan, assistant professor of population & quantitative health sciences here at UMass Chan Medical School. Really important work. Thank you so much for taking the time to tell us about it.

Thanks for joining us. I am your host, Jennifer Berryman.

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