

The Antigen Season 3
Episode 2: Script
FINAL

Dr. Malik:

So all of this is exciting in terms of science in maternal immunization, but look, all vaccines are 0% effective if they remain in a vial and don't get in people's arms.

KARI:

This is The Antigen and I'm your host Kari Yacisin. I'm an infectious disease physician and a lead in U.S. Medical Affairs for Pipeline Vaccines at Pfizer. In this special 3-part mini-series, we're diving into maternal immunization.

Last episode, we set the stage: maternal immunizations are a big deal — and can have a real impact. Vaccines for pregnant people can help provide protection for younger infants who are otherwise vulnerable because at that age, they are too young to get vaccinated against certain illnesses themselves.

But the potential protection that vaccines can offer *only* work if people actually get the vaccine. That's where things get a little more complicated. This episode, we're looking at barriers to widespread maternal immunization uptake. If you're afraid this will be all doom and gloom, fear not. After we talk through the problems, we'll talk about some potential solutions and what's really worked in the field.

So, let's jump in: Given the clear benefits for babies, what stands in the way of pregnant people getting shots?

Dr. Malik:

There are system level barriers, individual provider barriers, and patient attitudes like vaccine hesitancy.

KARI:

That's Dr. Fauzia Malik. Dr. Malik is an associate research scientist at the Yale School of Public Health. She's worked in anthropology and health development for two decades. She's done research on how to increase acceptance of vaccines for pregnant women in countries around the world including Pakistan, Kenya, Honduras, Argentina, and the United States.

Dr. Malik:

The specific methodological expertise I have is anthropology of health policy that uses anthropological methods to explore policy and understand how a policy becomes implementable, among other things. How I started maternal vaccine work, I was in Atlanta at that time, and as several teams, several of my colleagues were working already on maternal immunization related work, doing mostly clinical and epidemiological vaccine acceptance, but not from an anthropological perspective. So there was a need expressed from them. And so I filled that gap.

KARI:

It makes sense that Dr. Malik's expertise is important in this work. The challenge at hand has everything to do with understanding — and subsequently changing — human behavior. People have been looking into ways to conceptualize — or organize — drivers of behavior in terms of people getting vaccinated. And they have proposed various frameworks or theoretical models to look at behavior and social drivers of

vaccinations. These theoretical models that have proposed ways to have successful vaccination programs have names like the 5 Cs, the Social Ecological Model, Gates and UNICEF's Caregiver journeys. Dr. Malik cited the model called 5 As: that is — Access, Affordability, Awareness, Acceptance, and Activation.

Dr. Malik:

And I think that in maternal immunization, all of those As apply. Now how access, is not just, you know, getting the vaccine to country or to province, but it means getting the vaccine where people are and making sure that there's easy access to immunization facilities. If you're a pregnant woman and you've gone to your OBGYN, they might not have the vaccines that you would like to get, so we've seen this here and overseas as well.

KARI:

Vaccine access can be challenging for many reasons. Years ago – and before my current job – I assisted with two different immunization campaigns – one in a refugee camp in Cameroon and one in Angola. I was supporting local health workers. In both campaigns, so many people told us that it wasn't so much that they were not interested in getting vaccinated but rather that getting vaccinated was not easy. In Cameroon, we heard from refugees that they had to wait in lines to get water and food – and that those lines were of higher priority to them than a line to get a vaccine. And in Angola, we heard that people were busy. When healthcare workers would go door to door – and literally seek out people where they were – people *wanted* to get vaccinated and got vaccinated.

For those in the U.S., vaccines may be more readily available. But still, shots may not be available at an OBGYN's office, and pregnant people might need to make another appointment or travel to a separate location.

That leads us to the second A, Affordability. Dr. Malik says this doesn't just refer to dollars and cents.

Dr. Malik:

Affordability is often perceived as just the price you have to pay out of pocket, the government pays, whereas what is important is also to look at afford affordability in terms of opportunity cost, the fair you have to pay, the time you have to take out, the work that you miss, all of those costs add up.

One of the things that I have seen in my research is that women, whether they're working from home or working outside, they are very busy. They don't have time. They have to take care of the kids. They have to take care of the house. They have to take care of the relations, and then they're working, whether it's inside the house or outside. So that defines access to them. If they don't have time, if they have kids with them, access becomes difficult. That's one very common thing I've observed as a barrier.

KARI:

The third A, Awareness, requires healthcare professionals to be well-versed about immunizations so that they are able answer patients' questions.

Pregnant patients may be particularly nervous about vaccines.

Dr. Malik:

It's different when it comes to routine childhood vaccines, everybody's aware of that, but when you talk about adult vaccines, and this we have seen it with Covid-19 as well, that's kind of a unique idea for people because we don't ask adults to go and get vaccines all the time. For children, there are schedules and children have to follow that and everybody's aware of it. So that's something very normalized already. Whereas the concept of adult vaccines is always something that people want to know more about. And especially *why* is the big thing. So if you're introducing a vaccine which is for pregnant women, a very specific segment of women who are in a state where it's in a lot of cultures and sometimes biologically as well, they're vulnerable, you know, so providing a vaccine around which there are a lot of questions and a lot of thoughts and a lot of conspiracy theories mostly surround these type of initiatives.

KARI:

On top of the fact that these patients are vulnerable themselves, they are also concerned about the vulnerability of their babies. In her research all over the world, Dr. Malik has asked mothers if they had to choose between their health or their child's health. Overwhelmingly and not surprisingly, across geographies, mothers choose their children. When pregnant people have questions about immunizations, it's important to remember that they are in that frame of mind.

Dr. Malik:

There's a range of some genuine questions about vaccinations, you know, particularly during pregnancy because women want to make sure that their baby's going to be healthy when born. So anything that might harm the fetus is their biggest concern.

So this barrier you can see is at a systems level, because the information is not flowing through about the latest research or science that is there, which is going to bring in a newer vaccines. It's also practice level, provider level, because they don't have the information. Do they have systems to get latest information and incorporate in their daily practice or not? And then that, you know, eventually it's the patient who doesn't get their questions answered. So that takes us to acceptance. If you don't have awareness, acceptance becomes another barrier. And in acceptance, we found that the biggest motivator for women to get vaccinated is how it's going to impact their baby.

KARI:

So Access, Affordability, Awareness, and Acceptance, all have to be in order for widespread adoption of immunizations, including maternal immunizations. But on top of those things, patients sometimes require a push to actually get shots in arms.

Dr. Malik:

A lot has to happen before we can expect anybody to accept, and then activation, which is essentially a nudge theory that people who intend to get vaccinated, they require recall and reminders, to making sure that the pregnancy visits are happening in time, even in lower-middle income countries.

KARI:

The benefits and challenges are clear. So now with the understanding of the 5 A's, let's turn toward solutions. First, let's start with how we can address accessibility for pregnant patients.

Dr. Malik:

Talking about vaccines and not having vaccines at your clinic. That is one thing that is never going to work, I've seen this again and again, not just in lower-middle income countries, but in the U.S. as well. If your patient is asking questions about that, they want the vaccine, or you are telling them that you should get that shot, you should have that available to provide it to them. So connecting those dots, connecting the information, connecting the vaccine, connecting the people who can encourage, nudge people to have it and then provide it.

KARI:

Pregnant patients are often already visiting healthcare providers. If those providers have vaccines on hand, that solves issues of access *and* time-related affordability. Dr. Malik saw the impact that could have in the U.S. and around the world.

Dr. Malik:

And this happened in the U.S. and then what makes it striking is that several years later, it happened in Kenya, then exact same thing. So we are, we are conducting this research on maternal immunization, and we are, you know, enrolling people from OBGYN waiting rooms. And so we are conducting this interview with a lady who had two children. So one of our research assistants was keeping the kids busy with, you know, coloring and all that so that we can speak to the lady and we are talking to her, and, uh, she's talking about all the, you know, things that take up her time.

And she cannot make time for having these extra things added to her care, like maternal vaccines. And she was like, "that's not even important." So we, we kept talking to her and then she was like, "Oh, yes, I understand all of that. You're saying it is important, and I don't have time. I don't wake up every morning thinking about vaccines, but I'm not really hesitant to that whatever you're saying makes a lot of sense. And I have been taking flu vaccines." This was a study about flu vaccine in pregnancy. So she was like, "I have been taking my flu shots when I wasn't pregnant, but I never thought whenever I have been pregnant." And she was pregnant then as well, that was the third child.

And she said, “Okay, here, I have a suggestion for you. I can go get my vaccine right now.” And this was flu season, so there was a table in the corridor where this nurse was sitting and providing flu vaccines, and she was like, “You guys are already watching my kids. I’ll take five minutes. I’ll go get my vaccine. And that’s how you increase your vaccination coverage rates, because I’ll also get vaccinated.” So that happened. And then the similar thing happened in, in Kenya when we were working there and asking, you know, about maternal vaccines and, and the lady said, “Watch my babies. I’ll go get it. I’m not hesitant.” So the thing that we keep calling hesitancy in, in vaccination is not really hesitancy in terms of behavioral terms. It’s hesitancy because of the other As, five As that we were talking about, you know, so one or the other thing, or a combination of those things happen and people do not get vaccinated.

KARI:

Healthcare providers are also key when it comes to Awareness and Acceptance of maternal immunizations. Having a provider who recommends vaccination is one of the strongest predictors of vaccine uptake – especially among pregnant women. In Dr. Malik’s work across geographies, she’s found that healthcare providers are the most trusted source of information when it comes to healthcare.

Dr. Malik:

And that’s one of the assets we have to leverage when we will talk about solutions, you know, or strategies that have worked best. That’s the healthcare provider. And this healthcare provider is not necessarily the vaccinator in different parts of the world it’s a different person, particularly in low-middle income countries, it’s the person who can take care of you in terms of keeping your pregnancy safe. So it’s nurse, it’s the doctor, it’s basically a curative healthcare provider. So we need to leverage that. And they come in various shapes and sizes. They are highly trusted by people. And there’s this highest level of inherent trust. So anti-natal care providers in maternal immunization there are interesting differences in terms of second and third trusted source, and that’s where radiation comes in. In the U.S. it’s the professional society like ACOG, American College of Obstetricians and Gynecologists.

So these kind of professional associations are more trusted in the United States and elsewhere in the developed world, whereas in Latin America, it’s their ministries of health that they have a lot of trust in. Latin America has made some major strides in increasing maternal immunization. In South Asia, it’s actually the family that plays a very important role, particularly husbands and, and more so the mother-in-law. So they have a lot of influence in terms of what type of information is, you know, a woman receives, and then what type of decision she ends up with. So these are the subtle similarities and differences between different countries.

KARI:

Not all healthcare professionals have the information required on hand to answer patients’ questions and ensure that their patients have what they need to make their decisions about vaccination. Luckily, there are tools to fix that.

Dr. Malik:

So based on my qualitative work, colleagues at Emory University in Atlanta, where I used to work before, Allison Chamberlain took the lead and developed this module we called Vax Chat.

This was to help obstetric care providers effectively navigate conversations with vaccine hesitant patients. And then Allison trained healthcare providers in OBGYN clinics in Georgia. And during our quantitative analysis, we did find substantial increase in vaccination acceptance and uptake in

those clinics where these OBGYNs were trained to navigate these difficult conversations. Similarly with insights from quantitative, informative work that I led in Georgia and Colorado, Dan Salmon and Rupa Lair from Hopkins, uh, they took the lead and developed another tool which we called Moms Talk Shots. And that's an individually tailored educational application for maternal and infant vaccines. And it is meant to be used by mothers.

On top of that, Yale Institute of Global Health has developed several tools generally on misinformation and disinformation, and there's an updated version of how to talk to the patients in the clinic, et cetera. Yale Institute of Global Health also has a CME, a continued medical education program. So there are lots of tools available, but I think at the big picture level, there's a need for national CME program for OBGYNs, as new maternal vaccines get expanded, there is a huge need for that.

KARI:

These informational tools are only effective if they're actually used. When healthcare professionals are armed with the information they need and have vaccines on hand, patients are set up for success. When it comes to the final A, Activation, there's an evidence-supported strategy for that final nudge to get shots in arms.

Dr. Malik:

One thing that has worked a lot and we've seen that in our research is what we called Immunization Champions. So somebody dedicated at a clinic whose work is that, who is managing making sure that anybody who comes to the clinic, they get to hear about the vaccines, they can ask questions, their questions can be answered, and then if they want the vaccine, the vaccine is available there.

So it's that person who's going to look after that work. It could be a nurse, it could be the office manager, it could be anybody, but it has to be a person who's championing this cause, you know, who wants to dedicate their work for this task. So this is what we found in number of our studies, but most recently in this randomized trial that our team is doing, and I'm leading a part of it, the qualitative effort, where we are looking at quality improvement interventions in 10 clinics in Connecticut, and the person coordinating our intervention studies is the Immunization Champion. And that Immunization Champion is the linchpin in all of these efforts. You know, uh, that's what we need, a micro level effort. Someone is physically there to take care of it. That's what we need.

KARI:

These solutions don't seem to be complicated — but they do require coordination. They require buy-in from medical experts and on-the-ground healthcare workers to make maternal immunization more convenient, accessible, and routine. While we've made great progress, there is still work to do to overcome the barriers we've outlined. And the stakes are high: there's an opportunity to have a significant impact on the health of infants: helping protect infants from illnesses for which we already have vaccines *and potentially* from diseases with immunizations in development.

Dr. Bill Gruber:

Trying to treat babies for this disease is not the answer we need to protect and prevent the disease from happening in the first place. And so I think the better way we've identified and that is giving a vaccine to pregnant women to pass antibody to the infant that can keep them from getting sick and ending up in the hospital.

KARI:

In our next and final episode, we're talking about what it takes to develop immunizations for pregnant patients and some of the exciting new innovations on the horizon.

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See you next time!