WIG Webinar
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"Protecting Moms and Babies: Removing State Level Barriers to Maternal Immunization"

Featuring:
Georgia State Senator Gloria Butler, Southern Regional Director, WIG Board of Directors
Karen Crowley, Vice President of Nursing Education, Research, and Practice; Association of Women's Health, Obstetrics and Neonatal Nurses
Dr. LJ Tan, PhD, Chief Strategy Officer, Immunization Action Coalition
Gretchen Wartman, Vice President for Policy & Program, The National Minority Quality Forum

Senator Gloria Butler: Welcome, and thank you for joining Women In Government's policy roundtable *Protecting Moms and Babies: Removing State Level Barriers to Maternal Immunization.* Today we'll discuss routine vaccinations and their impact on maternal health.

I'm Georgia State Senator Gloria Butler, Southern Regional Director of the WIG Board of Directors. WIG's all-legislator Board of Directors guides programming on timely issues facing state legislatures nationwide.

We have a few housekeeping items. I invite everyone to please introduce yourselves in the Chat Box located in the Zoom Toolbar and please share your questions or comments there. Also, you may want to select "Speaker View" from the Zoom View Options if you are watching along with today's conversation and not just listening in. And finally, please connect with WIG on all of our social media platforms!

Now, on to today's program: *Protecting Moms and Babies: Removing State Level Barriers to Maternal Immunization*!

Joining us today to talk about what we policymakers can do are Karen Crowley, Vice President of Nursing Education, Research, and Clinical Practice for the Association of Women's Health, Obstetric and Neonatal Nurses; Dr. LJ Tan, PhD, Chief Strategy Officer for the Immunization Action Coalition; and Gretchen Wartman, Vice President for Policy & Program for the National Minority Quality Forum.

Thank you all so much for being with us today!

To start, it would be helpful to gain a high-level understanding of what we're currently seeing in the prenatal immunization space. Karen, would you be able to provide some context and give us an overview of the current landscape in the United States?

Karen Crowley: Thank you, Senator Butler. I would be happy to. Immunization during pregnancy is an essential part of prenatal care offering important protection to both the pregnant individual and the baby. Health care providers which – when we refer to health care providers, we're talking about OB-GYNs, any physicians, midwives, nurse practitioners, physician assistants – we refer to this type of care as primary prevention, preventing the disease from happening before it has a chance to infect someone.

These vaccines help prevent pregnant individuals from getting these infectious diseases during a time when they are more susceptible to more severe complications and also provide protection to infants

during a window of vulnerability when they're too young to receive their own immunizations to protect themselves. Many infant vaccines don't start until they are two months of age, leaving all infants susceptible to these infectious diseases that result in higher hospitalizations, long term health consequences, and potentially death.

Annually, over 100 pregnant individuals die from the flu virus in the United States. Pertussis, which we know as whooping cough, worldwide causes 160,700 deaths of children less than five. And if we break that down a little bit more, 86,000 of those children are less than one, and 58% of that – which is about 50,000 – are less than two months of age.

When we look at pregnant individuals infected with COVID-19 over the last 18 months to 2 years, they are two times as likely to require ventilation and ICU admission and 17 times more likely to did when compared to non-pregnant individuals.

The key point here that I want to make is all of these deaths are preventable by the use of an appropriate prenatal immunization adherence program. Currently, the CDC recommends that pregnant individuals be vaccinated against the flu at any time during their pregnancy, TDAP early in the third trimester, and COVID-19 at any time during the pregnancy.

These recommendations are based off a plethora of scientific evidence regarding efficacy and safety to both the pregnant individual and the baby. They have existed since 2004 for the flu vaccine and 2012 for the TDAP vaccine. Across most states, there is fairly broad coverage for these two vaccines as well as the COVID-19 vaccine. Through one path or another, pregnant individuals participating in both public and private programs can get coverage for recommended prenatal immunizations, but not all states have equal coverage.

And yet, despite the recommendation and coverage that is for the most part adequate, the CDC data estimates that only 30.7% of pregnant individuals received both the flu vaccine and the TDAP vaccine, which is actually 10% less that the vaccination rate in the previous year from 2019 to 2020.

If you look at just the flu vaccine, there was a 7% decline in pregnant individuals being vaccinated from 2020 to 2021 compared to 2019 and a 3% decline in the TDAP vaccine, and I'm sure that has something to do with the pandemic and the availability and access to health care during shutdowns.

Achieving adequate prenatal immunization rates has been a long-time battle; however, the COVID-19 pandemic has forced an increased awareness of these challenges and provided an impetus to remove the many structural barriers that exist.

We also see in some populations, like those participating in Medicaid, immunization rates are even lower in spite of the fact that prenatal vaccines are covered in one way or another across nearly all states.

Vaccination rates are less in people of color, Hispanic populations, those that live below the poverty level, those that are less educated, and those that reside in the southern region or rural areas of the United States.

For example, the prenatal immunization rate for both the flu and the TDAP vaccine in Black individuals was 17%, down from 23% in the previous year, and Hispanic individuals are vaccinated 25% of the time for both of those viruses.

Today, immunization and prenatal health experts LJ Tan from the Immunization Action Coalition, Gretchen Wartman from the National Minority Quality Forum, and I are going to discuss the ongoing barriers standing in the way to improve prenatal immunization rates and explore some of the opportunities for addressing these issues at the state level.

Thank you so much for joining us today, and we look forward to talking with you about this important topic.

Senator Gloria Butler: Thank you so much, Karen. That background really helps contextualize the current challenges. Clearly rates of vaccination during pregnancy are lower than they should be despite well-supported recommendations and evidence of the benefits of these vaccines for both pregnant individuals and their babies. You talked about a range of barriers that are standing in the way of improved prenatal immunization rates. I think getting a better understanding of those barriers and the specific opportunities to address them would be helpful.

Dr. Tan, what do you see as major challenges to immunization among pregnant populations, and are there ways we can address these issues? Can you talk about the role data plays in this conversation?

Dr. LJ Tan: So, thank you very, very much, Senator Butler, and thank you, Karen, for that introduction. I think it highlights some of the challenges as you said that we're facing on this high level with regards to immunizations in pregnant populations and how do we get there is, I think some of the things that we want to get at.

I want to specifically focus on data, as the Senator has pointed out. Why is data important on this big level? For providers, the act to recommend a vaccine comes to something called assessment. You've got to assess to vaccinate that patient, right? I think whether or not you asses that patient is based on data. You need to know whether the patient's been previously immunized, for example, and where the patient might be in terms of the stages of pregnancy so that that person can get vaccinated. TDAP, for example, is optimally recommended toward the end of the pregnancy.

I think having access to data prompts the provider to then go ahead and offer, recommend, and give the vaccination for the pregnant person. Unfortunately, we do have some challenges with capturing data for pregnant people, and that reflects actually on a general problem that we have right now. It's getting better – which is why my fingers remain crossed – with capital adult immunization data in general.

You know, we have been really good with pediatric immunizations, and our state immunization information systems which captured this immunization have been really good at capturing pediatric data and are only just now beginning to catch up with the adult immunization data.

To touch on that just a little bit, monitoring and reporting immunization data falls to the states - actually states and jurisdictions. Specifically, there are 62 individual immunization information systems jurisdictions that get data from people who are immunized and put them into a database. These used to be called immunization registries but now have been modernized to a new terminology which we can the immunization information system or the IIS.

Because of the fact, and I think this is obvious – every state gets to decide, and every jurisdiction gets to decide how they want to run their IIS – each jurisdiction will have different metrics and different ways of collecting data with regards to adult immunizations. Some states are really, really comprehensive, and very, very good, and even with those states where it's comprehensive, there are still data gaps that those states may have. And in some states they're not as comprehensive. In those states, for example, their immunization information system may not even ask about whether the patient is pregnant.

So therefore, when you look at someone's immunization record in that state, you will see that the patient has not been vaccinated, but you'll have no idea whether the patient is pregnant. As a result, you as a provider will have a challenge saying, "Well, should I recommend flu? Or should I recommend TDAP?" because you don't have all that data, that great big picture of where that person is.

And then, when you don't have that data as a state, I think the challenge is that you don't know how well you're doing with regards to pregnancy status and vaccination, so you don't know whether you need to put more effort into vaccinating your pregnant people because you just don't know. I think this is a challenge.

When you don't have that data, when you're trying to connect that data with what we call our electronic medical systems – right now electronic medical records in the healthcare systems where a lot of the patient care happens, we've got these interoperability issues. When you don't have data and the health care system is trying to get that data and the two systems can't communicate because of the challenges there or if they can communicate the data is not available, you create this gap in getting this complete picture with regards to pregnancy.

So, when we talk about data in terms of knowing how our pregnant immunization coverage rates are doing, the CDC actually does publish data every year. But remember it's every year, so the data tends to be backdated and then secondly, we also have to remember that it's also done through what we call self-reported survey. In other words, people self-report whether or not they got offered vaccination, whether they receive vaccination for either influenza vaccination of TDAP vaccination.

Because of the fact that it's self-reported, there's a challenge with reliable data collection. When you put these barriers together – the fact that we have an annual survey that's done through self-report, that the state immunization information systems are based in the states and states have different

incentives and different levels of collecting data on pregnant people, in the United States in general, we do not have a way to comprehensively capture in real time how well we are doing with prenatal immunizations.

When we do not have this great big picture of what we're doing and how well we're doing in the current situation, it makes it much harder for us to develop targeted and effective solutions. It's just that much harder, and I'm illustrate a very specific example right now before I wrap up here. I apologize for talking so much, but this is something I think we need to get an understanding on because data collection can happen and should happen at the state level, right?

The CDC just introduced for this influenza season a real time dashboard on collecting flu vaccination coverages rates, and here's why this is important. This data is about two weeks behind as opposed to several months behind, and it allows us to now react on the ground to very recent data on coverage.

This dashboard just reported that our maternal immunization coverage rates of flu vaccination for influenza is 17 percentage points below what it was last year, so that's 17 percentage points behind where we need to be. This is real time, we know this now, which means we can now focus on that and go reach out to our OB-GYN providers, reach out to our pregnant individuals and say, "Hey, if you've not been flu vaccinated, you need to get the flu vaccine because it's coming. In fact, it's coming up in Georgia. Flu is showing up, so we need to get these people protected right away. Now we can actually do something because we have data.

Thank you so much for letting me kind of get on this bully pulpit. I appreciate that very much.

Gretchen Wartman: My name is Gretchen Wartman, and as Senator Butler stated, I'm Vice President for Policy and Program for the National Minority Quality Forum. I'm also the former Maternal Child and Health Director for the state of Missouri, and to my great surprise, I graduated college 50 years ago. And 50 years ago, I started my first job in the public health environment for more than 50 years, and in that time, the one component of care around which there was total consensus was the efficacy and value of quality prenatal and perinatal care for all populations.

We've had differences of opinion regarding everything else but never about the need to assure that pregnant women and their infants in the critical period prior to birth and a year post receive quality care.

While Karen and LJ have done an excellent job describing the value of prenatal vaccines and influenza vaccine and the importance of ensuring that we have data to monitor the system's progress, I think we've got another much more critical issue which is the question of why the physicians who informed us from the very beginning that this was an essential service are failing to provide quality care to these populations.

The question then becomes what steps, which is what Senator Butler mentioned in her introduction, what steps and what actions need to be taken at the state level to incentivize better quality care in

these provider populations – either through incentives or I would submit possibly through the disincentives to disincentivize the position of poor quality care. Poor quality care includes not providing to pregnant women and infants the immunizations – influenza, TDAP, and any future immunizations – that are essential to their health.

So, I'm going to suggest that part of the challenge here – and I hear LJ, but my reaction to LJ is that it can't be that complicated, and it can't be that difficult to communicate to physicians that which they need to do, that which they know that are supposed to do. And the question is why they are not doing it, and it tends to read down to conversations about reimbursement other business concerns that, in their view – and it's a legitimate view – compromise their ability to make those services available to these populations around which there is also consensus are already at risk by virtue of their insurance status or their eligibility for insurance.

I am digressing from the script – I'm acknowledging that, I tend to do that – but we have lots of conversations in this country regarding cultural competence or cultural issues that supposedly affect the patient's ability to assign value to care.

I submit for the conversation as we move forward that the culture that may be problematic is the payer culture and the provider culture that makes it acceptable to not provide essential, lifesaving, disease-preventing care to these populations who will be harmed – and not only in the short term but in the long term as well – unless that care is provided.

So, I'll stop there and return to Senator Butler so that she can move us forward in a short conversation. I will say that the National Minority Quality Forum sort of in recognition of these cultural challenges recently redefined our mission statement to very simply the reduction of patient risk as our mission statement.

The conversation we're having today is about assuring that care is provided that reduces risk for these pregnant individuals – these women and their infants – not only in their perinatal period but throughout life, and we look forward to continuing to work with all of you to address this appalling situation. Thank you.

Dr. LJ Tan: Senator Butler, if I could just quickly jump in here for a bit with Gretchen's comment, I agree. I think data is one of our gaps, but I agree that we also have to figure ways to help our providers do a better job. I think part of it is incentives, and I think I agree with you – disincentives is the reward or punishment thing, right?

I actually have just sent out and I think we can send out to the people on this call HEDIS, which is a performance measurement system that meant that health care payers use to measure performance has now officially been put in place, a prenatal immunization measure which is now linked in the chat, I believe. I think this is going to be one of way where, per your comments about providers, we're going to be able to use this to begin to leverage providers to be more aware of their patients and offering immunization.

I think you brought some really important points up, so thank you, Gretchen.

Senator Gloria Butler: I'm curious, Karen—you're a nurse practitioner with deep experience working in the women's health space. I'm wondering what some of the biggest barriers to prenatal immunization are on-the-ground, at the provider/patient level – if you could give us some more information on that.

Karen Crowley: Yeah, that's a great, great question, and as a women's health practitioner for over 30 plus years, I've seen the many barriers that we see at the implementation level, some of what Gretchen has touched on briefly and some of what Dr. Tan has covered as well.

However, one of the biggest issues and even with the implementation of the HEDIS perinatal metric that providers run up against, the biggest issue that providers run up against is related to the reimbursement and costs associated with purchasing, stocking, and administering these vaccines.

As Gretchen already indicated, that this a business part of health care, and it negatively affects our patient outcomes, right? However, the time that's involved in counseling each individual culturally appropriately in addressing the hesitancy factors that lead to the person's though that maybe they do not want the vaccine does take time, and our current payer situation does not recognize that time for health prevention counseling.

So, it's a bigger issue more than just maternal immunizations, and that would be a whole separate webinar.

Some of the states have different discrepancies such as Illinois. They don't allow for reimbursement for vaccine administration in the adults that are covered by Medicaid, and so although everyone should have them, the payers obviously need to be on board with this to help move this forward.

When you look at smaller health care provider practices, the burden of purchasing and stocking vaccines that may or may not get used is a factor and also ensuring that the staff that are vaccinating individuals are trained and available to administer, document, and track the inventory of those vaccines, and that cost can be very significant.

For example, as the flu season progresses, if the stock is depleted, the bulk purchasing of vaccines becomes more cost prohibitive to a small office because they won't use all those doses, leaving that office without vaccine supply to cover any additional pregnant individuals that come in that should get the vaccine through January, February, and March.

Secondly, regulations across the 62 jurisdictions that Dr. Tan mentioned relating to the IIS systems vary regarding which health care providers have the authority to administer vaccines, again putting an additional financial burden on small offices that then now require a nurse to hire a nurse to meet those regulations.

However, when we look at what happened during the COVID-19 pandemic, many other health care providers were trained and authorized to administer the COVID-19 vaccine to increase the number of vaccinations across the nation, and this model needs to be duplicated when it comes to prenatal vaccines.

We know that a strong recommendation from a provider can be one of the most important factors in determining uptake by the patients. However, with that being said, the prohibitive stocking and administrative costs associated with these vaccinations – what we really see happen on the ground is up to 56% of providers will recommend that their pregnant receive the TDAP and flu vaccines but won't be able to vaccine them in the onsite office that the patient is seeking care at and then refer to outside off-site locations. We also know from literature that referring to a secondary site decreases uptake of the vaccine by the individual.

Sometimes that's a matter of there's many factors that play a role in whether or not a patient goes to a secondary site. Much of it is related to the burden that is put on pregnant individuals to take additional time off work, to find and pay for additional childcare to go to that secondary site, and also to arrange or pay for transportation to that second site.

So, it's a missed opportunity when we're not able to vaccinate patients in our offices, and barriers that prohibit that need to be looked at and alleviated.

Even when a provider makes a strong recommendation and is able to offer the vaccine onsite, the issues of vaccine hesitancy can't be overlooked. It's not a simple, "Hey, you need a vaccine. Let's give it to you." Providers need to evaluate the reasons that may cause the hesitancy in an individual for the vaccine and have candid conversations, caring conversation that listen to those concerns and can address them,

Those conversations take time, and right now the way the reimbursement structures are set, it does not allow for providers to bill additionally on top of the pregnancy global fee for those sessions and can deter providers from taking the time to do that. And that's something that Gretchen has already called out.

I think those are the three biggest challenges on the ground that can be addressed in this webinar with looking at policy and legislation that may help to reduce those barriers.

Senator Gloria Butler: Thank you, Karen. This insight into the barriers to prenatal vaccination has been really helpful, and I hope it's very helpful for our audience as well. I'd love to spend the last portion of this webinar discussing how we can and should be working to close these gaps, particularly the potential solutions that can be implemented at the state level. Dr. Tan, let's start with you, and the Gretchen, if you would chime in when Dr. Tan finishes.

Dr. LJ Tan: Thank you again, Senator Butler. Let's talk about some of these things here, and I know there's actually a comment from Senator Karen Berg in the chat about where vaccines are given and the impact of, for example, measurement.

Where we do have a lot of data on is flu vaccine, and even with flu vaccine, I would argue that about 35% of flu vaccines are given in pharmacies – maybe 40% - and then about 30% to 35% are given in physician practices, so they're pretty equivalent back and forth for a little bit.

There's still a lot of vaccines, especially flu where the data is, that gets given in physician practices, and I think with some of the other adult vaccines like TDAP and shingles vaccines, I think there may even be a higher role in physicians offices as well, so I think the role of using quality measurements to promote vaccination through the payers is still very important.

But I think the bigger part of HEDIS is that is sets a standard of performance that then gets adopted, for example, by Medicaid and Medicare, because I think it's one of those things that begins to gather momentum as more and more prenatal measurements become implemented. I think that's why the HEDIS measurements are also very important to think about.

But with regards to the state in terms of data, where is where I really like to spend some time talking about, I think what we need to figure out is if you're in a state that has one of those immunization information systems that are not fully collecting data on pregnant people, maybe this is now a time to think about doing that.

And then once you start doing that with your immunization information system within your state, think about making sure there is what we call interoperability between the immunization information system and then also the electronic health records so that they can talk to each other back and forth so that reduces the burden of data collection.

In other words, if someone got a vaccine in their physician's office, that data that goes into the electronic health records automatically goes in to the immunization information system, so that's the interoperability. And then when that happens, if that person now goes to a pharmacist to get vaccinated, that pharmacist can now pull up that immunization information as well and then be able to provide the vaccine that's appropriate for that patient.

That cross talk between our data systems is essential to eliminate the gaps and help improve assessment and then then recommendation and giving of the vaccines.

I think other things we can talk about, and maybe Karen and Gretchen, you can talk about this as well, is this idea of vaccine education programs. I think a lot of states maybe need to think about how do we incentivize or educate pregnant people to ask and self-advocate for their vaccinations.

I agree that providers need to step up, Gretchen, but what about the idea that maybe people should be asking and maybe we can educate the public so say, "Hey, if you're pregnant, you should be asking what

vaccines are recommended for you."

Gretchen Wartman: Well, if that's the transition to me, I'm not disagreeing with anything that Karen and LJ have said. I would submit we've done that over the decades. We've crossed centuries, and we've done that. I can't remember the citation that's in the report – and I would encourage everyone to review the report that brought the three of us together in this conversation – but there's a significant differential between the maternal immunization rates paid for by the commercial sector versus those paid by Medicaid.

It's occurring to me to wonder, and it's a conversation we need to continue to have, whether those providers consider the immunizations to be an essential component of the care that's provided in the commercial environment but in the Medicaid environment or in the publicly funded environment it's an option.

And that fact that it's being considered an option takes me back to my initial concern which is that every message we've ever received from the physician community is that these immunizations are an essential component of the quality health service for the continuum of care for women and infants in the prenatal and postnatal period.

If we have patients who are challenged in terms of job flexibility, transportation, and physicians who for some reason anticipate or assume resistance – and perhaps maybe using that as a reason not to provide the care – I think we need to have some more conversations about ho to change the paradigm.

One of the things we're doing in the National Minority Quality Forum is undertaking a re-envisioning of health care system because we've got – and I heard it from LJ and I'm hearing it from Karen, and it's legitimate – we've got a system that is designed for the convenience of the physician, and the patient's inconvenience is not being given or the patient's needs – the patient as the purpose, patient health as the purpose of the system, is not being centered in the conversation.

That, I think, takes us to where we are in the country right now, thanks to what we've all been seeing for the last 18 months. The executive order signed by President Biden, which is very interesting, but really longstanding notion of equity and whether the patients we are discussing are being marginalized even in this equity conversation in favor or legitimate buy concerned provider peanut issues.

We can't resolve and we can't answer all these questions this morning. I think every single one of the recommendations on the slide and from the audience is worth considering, but we've got to rethink how we're incentivizing the entire research, delivery, and financing system to assure that the patient health, the patient outcomes, are the essential metric at every stage of the conversation.

Senator Gloria Butler: Thank you so much. That was great. Karen, we've got a few more minutes. You've provided us with great information on the benefits of maternal immunizations on pregnant people and newborn outcomes. Is there any other information you would like to provide to help families be infection free?

Karen Crowley: Thank you, Senator Butler. That's a great question, and I think what comes to mind is understanding that the prenatal patient and the newborn are surrounded by family members, right? The encouragement of – the importance of – making sure that family members receive the same vaccinations that we're speaking of today to help reduce exposure to the most vulnerable population, specifically when it comes to whooping cough.

Since the infant is so vulnerable the first two months of life and most infants are infected by household contact, it is recommended that all caregivers that are going to be in contact with the newborn within the first two months also receive the TDAP vaccines about two weeks prior to coming into contact with the baby, and that helps to establish what we or the CDC calls the cocooning effect so everyone that comes in contact with the baby is protected against TDAP and will help to reduce the transmission of TDAP.

So, I think understanding that maternal immunization, although we're talking about pregnant individuals and newborns, it is important to remember that the family structure and caregivers that are around those two individuals help reduce these diseases.

Senator Gloria Butler: This has been a great conversation, and I hope that, as I stated earlier, that the audience enjoyed it as much as I have in moderating you all.

I'd like to thank all of our presenters for taking the time to be with us today, and thank you to everyone for joining us! We hope that you will join us for our final webinar of the year, "The Role and Value of Pharmacy Services Administrative Organizations" next Monday, December 13th at 2:00 pm Eastern Time.

And I'd just like to say to take care. As my pastor would say, "Stay safe, sane, and sanitized!"

And most of all, to all of you that celebrate, Merry Christmas and Happy Holidays! Thank you so much.

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Resources:

CDC Weekly Flu Vaccination Dashboard
https://www.cdc.gov/flu/fluvaxview/dashboard/vaccination-dashboard.html

Association of Women's Health, Obstetric and Neonatal Nurses
https://www.awhonn.org/

Immunization Action Coalition
https://www.immunize.org/

National Minority Quality Forum
https://www.nmqf.org/
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HEDIS (Healthcare Effectiveness Data and Information Set) for Prenatal Immunization Status
https://www.ncqa.org/hedis/measures/prenatal-immunization-status/

"Importance of Reasons for Stocking Adult Vaccines." The American Journal of Managed Care. November 2019, Volume 25, Issue 11
David W. Hutton, PhD, Angela Rose, MPH, Dianne C. Singer, MPH, Carolyn B. Bridges, MD, David Kim, MD, Jamison Pike, PhD, Lisa A. Prosser, PhD
https://www.ajmc.com/view/importance-of-reasons-for-stocking-adult-vaccines

AWHONN's Educational Resources for Patients and Health Care Providers on Immunization for Pregnant Populations:
https://www.awhonn.org/education/vaccination/

"Strategies to Address Policy Barriers to Adult Immunizations in Federally Qualified Health Centers." White paper presented at National Adult and Influenza Immunization Summit
September 2019
https://www.izsummitpartners.org/content/uploads/2019/12/adult-imm-fqhc-white-paper-11-01-2019.pdf

"Improving Maternal Immunization Status: Working Towards Solutions to the Policy, Data, and Implementation Challenges Driving Suboptimal U.S. Maternal Vaccination Rates."
Author Group: Adult Vaccine Access Coalition, American College of Obstetricians and Gynecologists, American Public Health Association, AHIP, Association of Maternal & Child Health Programs, Association of Women's Health, Obstetrics, and Neonatal Nurses, HealthyWomen, Immunization Action Coalition, March of Dimes, National Association of Hispanic Nurses, National Black Nurses Association, National Coalition for Infant Health, National Minority Quality Forum, Society for Maternal-Fetal Medicine, and Vaccinate Your Family
https://roar-assets-auto.rbl.ms/documents/11382/Improving%20Maternal%20Immunization%20Status%20White%20Paper%5B2%5D.pdf

CDC - Surround Babies with Protection:
https://www.cdc.gov/pertussis/pregnant/mom/protection.html