Maternal Health in the U.S. - A Mounting Crisis

AUGMENTING TRADITIONAL MATERNITY CARE WITH VIRTUAL CARE

The Real Stories of Four Women and their High-Risk Pregnancies


Dayshona


Myana


Rachel


Paula

ViTelNet
SCALABLE CONNECTED CARE

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The United States ranks last with the highest maternal mortality rate of 11 countries with the highest income – a little known fact for first time parents. Moreover, recent statistics show the U.S. ranking behind 30 other countries with maternal deaths continuing to increase since 2000. Today over 700 pregnancy-related deaths occur each year – two-thirds of which are preventable. [1]

Among the many maternal health challenges facing the U.S. are high-risk pregnancies, barriers to proper care, gaps in the prenatal to postnatal care cycle, and glaring disparities in mortality and morbidity rates among underserved and minority populations. These gaps are further exacerbated by a continued shortage in resources and a siloed approach to maternity care that leaves patient populations increasingly vulnerable.

Recent advancements in technology and virtual care protocols have the potential to transform traditional maternity care. Typically a provider-led experience, traditional maternity care has yet to embrace patient-led models that are the norm in other standards of care today. Integrated virtual care paves the way to a more empowered, educated and informed maternity patient population that can proactively identify and mitigate life threatening risks. Its recent adoption offers an opportunity to start immediately mitigating the leading factors in maternal deaths, as identified by the CDC, including: clinician, facility and system deficiencies, like inadequate training, missed or delayed diagnosis of complications, poor communication and a lack of coordination between clinicians. (6,7) . [2]

In this white paper, we share the real world stories of four women who experienced unexpected complications during pregnancy. We illustrate opportunities to enhance traditional care with augmented virtual care services that have been proven to improve outcomes.

The current state of maternal health and outcomes:

- While maternal morbidity and mortality rates have improved in most of the world, the U.S. is the only industrialized country in the world where rates have worsened – all while the cost of care continues to increase. Although it ranks as the country with the highest per capita in healthcare expenditure across the world, the U.S. lags in its allocation and access to resources for maternity care.
- Maternal death rates in the U.S have doubled over the last 20 years, albeit partly due to improved ascertainment, while other high-income countries have reduced their rates (7).
- As maternal deaths rise, so too do severe complications from childbirth. For every maternal death, over 100 women suffer severe maternal morbidity with over 50,000 women every year experiencing a life-threatening complication related to childbirth (8). Pregnancy and childbirth are often framed as organic stages in a woman's reproductive journey, but these numbers and statistics make it evident that healthy outcomes for mothers are not guaranteed. [3]
- While mortality and morbidity rates affect all women in the U.S., glaring disparities among minority populations also exist. In 2020, the maternal mortality rate for non-Hispanic Black women was 55.3 deaths per 100,000 live births, vs. 19.1 deaths for non-Hispanic White women. Black women, as well as American Indian/Alaskan Native mothers, are two to three times more susceptible to death during pregnancy. [4]
- Factors like socio-economic status, race, and geography are creating difficult barriers for pregnant patients across the country. Critical challenges around transportation, taking time off work, and having access to specialized care are disproportionately affecting underserved populations.
- An OB/GYN shortage, especially in less-populated areas of the country, continues driving gaps in care. Approximately 11% of women of reproductive age in the United States experience difficulty having children, and few of them have access to quality treatment and/or early intervention. This is not surprising considering that about half of counties in the U.S. today lack a single OB/GYN. [5]

ABOUT OUR RESEARCH

As we conducted research to bring together the ideas and concepts for this white paper, our team pulled information from recent healthcare news, interviewed a series of telehealth specialists, maternity care providers, and women who had experienced high-risk pregnancies, to thoroughly identify the challenges and solutions provided throughout.

As a telehealth solution provider, we are actively looking for ways to increase access to care, improve patient outcomes, manage healthcare costs and address gaps that have long created barriers in healthcare. We are incredibly grateful to the women who came together to share their real stories and to drive awareness for the challenges facing maternity care today. Together we have created the potential for solutions that can be implemented today to address the challenges facing present and future families in the U.S.

PROVIDER PERSPECTIVES

CONNECTING SPECIALITY PROVIDERS

Dr. Craig Sable
Associate Division Chief of Cardiology at Children's National Hospital – Washington, D.C.

As Dr. Craig Sable, associate division chief of cardiology at Children's National Hospital in Washington, D.C., noted during a virtual ATA2020 session, the COVID-19 pandemic has only clarified the potential usefulness of telehealth for expectant parents. "We can connect primary obstetricians with maternal-fetal medicine experts, and we know this will improve outcomes," he said. "The only way to improve access is to use telemedicine."

Telehealth has the potential to address a number of factors, including working to eradicate systemic racism throughout the healthcare system. According to Dr. Sable, "No time in my lifetime, more than today, do we have an opportunity to use telemedicine to close that gap."

Drawing on resources published by the Kaiser Family Foundation, Sable proposed virtual prenatal and postnatal visits, mental health care, online provider-communication, lactation support, and at-home monitoring of blood sugar and other measurements as pregnancy-related services that can be delivered virtually. [16]

PRECONCEPTION:

Paula's Story

Paula and Phoenix

"We were so excited to start a family. We figured that it would take maybe a month or two, but months went by and then a year went by, and nothing happened. After a visit to my OBGYN, she mentioned that the irregularity of my cycles could be affecting my ovulation and may be a sign of Polycystic ovary syndrome (PCOS). Other than a few tests to check for PCOS (which came back negative) I would need to track my ovulation at home for a whole other year before we could identify any fertility issues. But that was it; I was on my own for another year."

Paula, Age 27 (Phoenix)

Challenges in Traditional OB Care

- Lack of resources to support early intervention due to ongoing shortage of OB/GYN providers
- Location and transportation constraints for patients to attend annual OBGYN visits
- Absence of education and support for first time parents during the first year trying to conceive

How Virtual Care Could Augment Traditional Care and Improve Future Outcomes

- Reassurance for parents with readily available, easily understandable, educational material via the patient portal and prescribed care pathway
- Ongoing access to resources that can better support conception, including access to specialists to oversee nutrition, ovulation tracking, medication management, and activity gauging
- Ongoing clinical oversight with remote monitoring to track vitals including blood pressure, body weights, blood sugar, sleeping patterns and heart rates via smart watches or wireless medical devices.
- Early family planning tools and educational resources
- Ongoing access to mental health resources for patients and families struggling with infertility

KEY TAKEAWAY

During the preconception period, virtual care can improve access to a multitude of additional fertility resources and educational materials and provide reassurance to patients who are trying to conceive.

PRENATAL CARE:

Dayshona's Story

Dayshona connects with the twins Damian and Davon

At 19, I had an unexpected pregnancy with twins. I was so overwhelmed but relieved when my family, and especially my mom, told me they would support me. Around the middle of my pregnancy, my legs started swelling all the way up to my knees, and my vision started getting blurry and spotty. But every time I checked in with my doctors I was told that everything was normal – I was to go home and relax and just drink more water. I knew something was wrong, and I didn't feel like anyone was listening to me. I was so frustrated and upset. It wasn't long after that I was rushed to the hospital with a severe case of preeclampsia (a condition my mom recognized as she had suffered from it before). By this point, my blood pressure was through the roof, and I was told I had to give birth immediately via a c-section. Everything seemed to be happening at once. I had to sign papers quickly without knowing what I was signing, and after I had my babies I wasn't even allowed to see them until the next morning. My recovery from the c-section was difficult in part because I had no idea what to expect or what recovery looked like for a surgery like this. Not to mention the postpartum depression that I battled through for ten months. I couldn't stop crying, and while I wanted to hold my babies, I felt so guilty that they might feel what I was feeling. I wish I had more support, if it wasn't for my mom guiding me through it and recognizing the warning signs, I wouldn't have known what to do. For my second pregnancy, I hired a midwife, and had a whole different experience. Everything was so much better that time.

Dayshona, Age 24 (Damian, Davon, and Azlyn)

Challenges in Traditional Maternity Care

- Limited access to timely specialty care for geographically and financially challenged patients
- Significant investment in time and travel for patients - prenatal care consists of 14 in person visits
- Disproportionate access to quality prenatal care for vulnerable populations

- Operational business pressures to increase patient volume while decreasing time spent with individual patients
- Inconsistent advanced education available for patients on potential early medical complications and high-risk warning signs
- Lack of affordable and scalable patient tools to track their medical progress with provider oversight

Opportunities to Augment Traditional Care with Virtual Care

- Enable network expansion for community health centers and local clinics to bring Maternal Fetal Medicine (MFM) specialists from partner organizations
- Reduce time and travel for patients by complementing required in person visits with virtual visits for average risk pregnancies
- Proactively monitor high-risk pregnancies in the home environment with capture and self-reporting of vital signs and other biometric data (remote monitoring biometrics such as blood pressure, body weights, oxygen saturation, blood sugar, sleeping patterns and heart rates via smart watches or wireless medical devices.), and increased patient risk mitigation
- Enable comprehensive support for complex and average-risk maternity populations by streamlining collaboration between the patient's care team (OBGYNs, Mental Health specialists, Midwives, Doulas, Labor and Delivery Teams, and Neonatologists)

KEY TAKEAWAYS

With the integration of virtual care, providers can alleviate the associated cost and lost wages while increasing access for more patients. Traditional care for a low-risk pregnancy today includes 14 prenatal visits, of which only a few (ultrasounds, labs, etc.) require in-person visits. Going beyond video visits or standard consults, but rather improving patient engagement between visits via both synchronous and asynchronous interactions, providers can deliver comparable health outcomes to traditional methods while improving the patient experience.

Access to prenatal care for high-risk patients can increase, despite shortages of maternal fetal medicine specialists. Virtual care benefits are even more significant for the six to eight percent of all pregnancies that will experience high-risk complications.

Studies show that reduced-visit prenatal care models that are enhanced with remote monitoring can result in higher patient satisfaction and lower prenatal stress, while reducing the number of appointments with clinicians and maintaining care standards for pregnant women. In one study of three hundred pregnant women at less than 13 weeks of gestation, in an outpatient obstetric academic center in the Midwest United States, patients experienced a higher satisfaction level (93.9% for virtual care vs. 78.9% for the patients who used in-person care). Pregnancy-related stress was also reported to be lower at 36 weeks of gestation (0.32 for virtual patients vs.0.41 for in-person patients). There was no statistical difference in perceived quality of care between the two groups, and maternal and fetal outcomes were similar between the groups. [6]

Virtual care visits can uncover fetal problems earlier and can lead to more proactive care. Reducing the cost of childcare and transportation is important to consider, as noted by Dr. Craig Sable, associate division chief of cardiology at Children's National Hospital in Washington, D.C., in an ATA2020 session. While recognizing that virtual care screenings certainly benefit patients whose fetuses present abnormalities, Sable urged attendees to weigh the value of near-immediate information for parents with fetuses without apparent severe disease. Rather than make parents wait two weeks to meet with their doctor in person, he said, "you can reassure the mom ... on the spot." [7]

LABOR & DELIVERY:

Myana's Story

Myana and Nova enjoy one of their first outings together

"My daughter was born in August, and I wasn't due until November. Seven months into my pregnancy, I began having serious labor pains. I thought I was only experiencing Braxton Hicks contractions up to that point. My sister drove me to the hospital, and I was rushed into the birthing room where they actually asked me if I had any tattoos or piercings (presumably to identify my body). I was so scared, I hadn't even reached my third trimester, and I was already seven centimeters dilated and going to give birth. After the birth, my doctor had to manually reach in and scrape out the placenta, which was extremely painful. She told me that this was critical to avoid serious infection, and yet no one from the hospital checked in with me in the days after to make sure I was doing okay. My preemie daughter was sent to another hospital, so my immediate focus became visiting her daily while being far from my home. While my baby received good care in the NICU at the new hospital, I didn't hear back from any health care providers about my own personal condition until my six-week check-up. After the complications of that early birth, I look back and realize that there were gaps in my own care that could have been better addressed."

Myana, Age 28 (Nova)

Challenges in Traditional Maternity Care

- Lack of awareness around preterm labor and warning signs
- Lack of access to labor and delivery resources including access to birthing courses, a birthing plan, alternative support including doulas and midwifery services
- Glaring disparities in maternal health outcomes for Black, Hispanic, and indigenous women who are three times as likely to experience worse maternal outcomes. [8]
- Typically caused by disproportionate access to quality healthcare, underlying chronic conditions, structural racism, and implicit bias.
- Limited support for mothers directly after birth, especially those with premature births and with children who have medically complex conditions

Opportunities to Augment Traditional Care with Virtual Care

- Deliver training and supporting resources for clinical staff to discern implicit bias, cultural differences and preferences during labor and delivery
- Create a network of timely and readily resources to proactively help patients prepare for delivery and potential complications via patient web portal
- Enable proactive home monitoring for high-risk patients who are at-risk for preterm labor, including those with pre-eclampsia, cardiovascular disease and those with postpartum hypertension
- Provide additional mental health resources for patients directly after birth, specifically those who experienced traumatic births
- Provide access to neonatologists and specialists ahead of time and directly after birth for parents of children who are born prematurely or who have medically complex conditions
- Increase access to lactation consultants for breastfeeding mothers directly after birth

PROVIDER PERSPECTIVES

ABILITY TO DIAGNOSE AND TREAT

Sheri Hamersly, M.D., F.A.C.O.G.
Maternal-Fetal Medicine Associates of Maryland

""Real-time telemedicine lets you not just communicate with the patient, but also be able to diagnose and treat. The more sophistication you have on your telehealth platform, the better you will be at honing in on diagnosing and treating, and that's going to make your patient more comfortable. The truth is, many patients that need to be seen urgently can get the same service through telemedicine, as if the patient was in the office.

Telemedicine also connects the dots between specialty providers and allows us to offer more effective and efficient care, especially in high-risk pregnancies. With a telemedical platform like ViTel Net, we can conference with the right people, along with the patient. We can consult with other specialty providers, such as a pediatric cardiologist along with the patient's OB/GYN doctor, within a conference type meeting and then come up with a solution."

KEY TAKEAWAYS

Preterm labor and birth rates are shown to decrease through the use of virtual care support groups, and legislative advances are being made to help advance virtual care. This can especially affect the glaring disparities among Black and Hispanic women.

Virtual care support groups can decrease preterm labor rates among Black and Hispanic women, who face more adverse effects in childbearing than White women. The Georgia Department of Public Health implemented a virtual care intervention, Centering Pregnancy, with the Southwest Georgia Public Health District in 2011 among pregnant African American and Hispanic women in high-risk obstetric clinics. The intervention brings together pregnant women with similar delivery dates to participate in group discussions. Two-hour group discussions are facilitated by a clinical provider and support staff and occur immediately after prenatal visits. A maternal–fetal specialist participates remotely to provide women with 1-on-1 consults and facilitates group discussions. Among the program's 500 deliveries, preterm labor rates decreased from 18.8% at baseline to 8% at the end of the 18-month intervention (32). [9]

In Myana's situation, she could have had better support even as she had to turn her focus immediately to the care and survival of her preterm baby, who was moved to another hospital further away from home. A follow-up telehealth visit before the six-week checkup could have helped Myana find resources like the Ronald McDonald House that allowed her to stay near her baby at the new hospital. Myana found this resource completely on her own. If any complications from the preterm birth or placenta removal had arisen for Myana, a telehealth visit could have caught and addressed those as well.

The political and legislative landscape is beginning to shift in favor of expansion and funding of virtual care initiatives. Like other virtual care services, telemedicine for pregnancy faces barriers to permanent expansion, particularly around reimbursement and licensing. The necessary infrastructure may be in place, but as ViTel Net executive vice president Mark Noble said about telemedicine in general, the challenges may be "more political than they are technical." Still, even before coronavirus rates swelled around the country, legislators eyed virtual care expansion as a viable way to promote maternal health, especially among women in rural communities. [10]

Congress saw the introduction of a package of 12 bills called the Black Maternal Momnibus Act of 2021. Among other things, the package of bills calls on the Centers for Medicare & Medicaid Services to consider payment models that improve the integration of virtual care services into maternal healthcare programs and establish grant programs for models of care that include access to broadband internet and remote patient monitoring services and programs that use mHealth tools to address social determinants of health. [11]

POSTNATAL CARE:

Rachel's Story

Proud big sister Kensley holds her baby brother Truett for the first time

"I just completed two pregnancy journeys. I now have a four-week-old son, Truett, and my older daughter, four-year-old Kensley Marie. Both were high-risk pregnancies. In both cases, I developed HELLP (Hemolysis, Elevated Liver enzymes and Low Platelets) syndrome, and Truett was born three weeks early by emergency C-section. My first pregnancy consisted of daily trips to the doctor's office to have my blood pressure taken, which was difficult to arrange as a first-grade school teacher. Virtual appointments sure would have helped at that time! But where I most could have used virtual appointments was after I had my babies. I had lost my mom unexpectedly about a year and a half before I had my first child, and while I have a supportive network that includes my husband and friends, those early days of breastfeeding and my residual concerns about my own health were stressful on top of the high-risk pregnancy itself. Not having my mom around to help me day-to-day in those early weeks, I would have really appreciated having a few more spur-of-the-moment virtual appointments to get that extra support."

Rachel, Age 33 (Kensley and Truett)

Challenges in Traditional Maternity Care

- With no guaranteed at home visits post-delivery, about 52% of all maternal deaths occur in the postpartum period
- With no guaranteed at home visits post-delivery, about 52% of all maternal deaths occur in the postpartum period
- Lack of social support and breastfeeding education for new mothers
- Lack of education about newborn care after discharge
- Lack of support for identifying and treating postpartum depression and anxiety
- Limited maternal insurance coverage beyond delivery

Opportunities to Augment Traditional Care with Virtual Care

- Establish post-partum debriefs and collaboration between patient care teams (L&D team, OBGYNs, etc) to eliminate the gaps in care for high-risk patients after discharge
- Increase postpartum follow up for patients to rapidly identify postnatal issues like hypertension, or mental health conditions like postpartum depression, and prevent hospital readmissions before the standard 6-week checkup
- Expand access to lactation consultants and resources for breastfeeding patients
- Provide mental health resources for mothers before discharge to help identify and treat postpartum depression and anxiety
- Establish or partner to provide patients with local support groups including mommy groups, etc.
- Enable 24/7 virtual access to parents of babies in the NICU

PROVIDER PERSPECTIVES

REDUCING TIME GAPS IN CARE

Sheri Hamersly, M.D., F.A.C.O.G.
Maternal-Fetal Medicine Associates of Maryland

Our patients have become more comfortable with virtual visits, and they want reassurance that they can get something diagnosed right away. For instance, our practice is heart certified. When we see a potential cardiac issue, we need to confirm a diagnosis immediately. When we can dial up the pediatric cardiologist with the virtual technology that we have, we are not just technologically savvy, we are efficient. And it's reassuring to ALL of us to be able to jump on it right away. It also cuts down on another visit for the patient. No patient wants to be told, "We think your baby has a cardiac defect - we'll see you in a week or two months." Take care of it right now!

KEY TAKEAWAYS

Oftentimes the challenges and risks associated with pregnancy don't end with delivery but extend well into the postpartum period. This is particularly concerning for patients who are quickly discharged and sent back to their regular providers without access to all labor and delivery information/specialists. During the postpartum period, a woman is adapting to multiple physical, social, and psychological changes. She is recovering from childbirth, adjusting to changing hormones, and learning to feed and care for her newborn (1). In addition to being a time of joy and excitement, this "fourth trimester" can present considerable challenges for women, including lack of sleep, fatigue, pain, breastfeeding difficulties, stress, new onset or exacerbation of mental health disorders, lack of sexual desire, and urinary incontinence. (2,3,4) [12]

The American College of Obstetricians and Gynecologists (ACOG) proposes a new paradigm for postpartum care: the "fourth trimester." Most women in the United States must independently navigate the postpartum transition until the traditional postpartum visit (4–6 weeks after delivery). This lack of attention to maternal health needs is of particular concern given that more than one half of pregnancy-related deaths occur after the birth of the infant (6). Given the urgent need to reduce severe maternal morbidity and mortality, the Committee Opinion [of ACOG – The American College of Obstetricians and Gynecologists] … is to reinforce the importance of the "fourth trimester" and to propose a new paradigm for postpartum care(2, 3 ,4). [13]

Postpartum virtual care visits can rapidly identify postnatal issues, such as hypertension in mothers, and prevent hospital readmissions. In Wisconsin, researchers conducted a postpartum virtual care study in which women were provided with home blood pressure monitors to transmit data to a care team and a nurse scheduled telehealth visits or telephone calls with the patients, beginning at 48 hours and as needed, until a patient's 6-week clinic visit. The program enabled clinical staff to rapidly identify women who were hypertensive, and none of the women in the intervention experienced a hospital readmission (33). [14]

Virtual care visits between lactation consultants and mothers can solve problems and increase the duration and exclusivity of breastfeeding. Lack of access to professional breastfeeding support can often lead to cessation of breastfeeding. By leveraging secure and encrypted virtual care videoconferencing, a mother can gain valuable information in the privacy of her home. Lactation consultants can offer information on latching techniques and can coach the mother in real time. The mother can also report issues such as pain and milk supply more often, on a daily or weekly basis. Because women who encounter issues with breastfeeding and who don't get professional support are less likely to continue, and because their previous experiences have an impact on the decision to breastfeed future children, virtual care can make a big difference in the mother's and baby's success.

Research supports the idea that patients view virtual care positively in postnatal care. One study was conducted in Long Island, NY, where lactation groups were conducted via virtual care during the pandemic. Evaluation data from the study suggested that parents viewed the sessions very positively, valuing the opportunity to learn about breastfeeding from lactation expertise in both models. Mothers expressed that attending the virtual support groups offered a sense of community and togetherness that helped combat their feelings of isolation during the pandemic. One participant said, "Everything was so helpful. I learned so much I didn't know. How to properly use my breast pump, how much my baby should be eating, tips on breastfeeding." [15]

PROVIDER PERSPECTIVES

TELEHEALTH PLATFORM ADVANCEMENTS

Peter Yellowlees, M.D.
Professor of Psychiatry and Chief Wellness Officer –
University of California at Davis and UC Davis Health

The American Telemedicine Association made physician well-being and stress reduction a cornerstone of its 2019 conference and exhibition in New Orleans. The effort was spearheaded by Peter Yellowlees, M.D. He noted that while older technology platforms – including telemedicine – may have been cumbersome, newer versions are smaller and more portable. "The beauty nowadays is we're freed up to do more of what we want to do," he said.

A connected care platform can also foster collaboration and teamwork, a cornerstone of the industry's move toward value-based care and the patient-centered medical home. Through telemedicine, doctors and nurses can collaborate with each other, and with specialists, reducing stress on one provider and enabling different providers to handle the tasks more suited to them. "Healthcare is increasingly a team game," says Yellowlees. "The future (of the industry) lies in virtual care, and virtual care teams." [18]

JUST ENOUGH TIME:

Paula's Story

Paula, Alex, and baby Phoenix are ready to head home from the hospital

"I stepped on the scale one week to find that I had gone up 5 pounds in 5 days, so I made a quick visit to my provider. After both my urine and blood pressure tests came back abnormal, they sent me straight to the nearest hospital with a NICU. It turned into a mild, then severe preeclampsia diagnosis that led to the delivery of my baby at 32 weeks. Having incredible doctors tell me that they couldn't stop what was happening to me was terrifying, after what was otherwise a perfectly healthy pregnancy. It was hard not to feel like I had failed. I just wish I had asked more questions or had more education on potential complications - it may not have stopped my condition, but it would have made me feel less hopeless at a time when everyone needed me to stay calm and keep my blood pressure down. Thank God, I pushed myself to go to my doctor that day, or this could have ended tragically for me or my baby. Those five days bought us just enough time for the doctors to give me the medication and steroids I needed to protect my baby's brain and lungs before delivery."

Paula, Age 27 (Phoenix)

PROVIDER PERSPECTIVES

SUPPORTIVE SERVICES AT HOME

Deanna Larson
Former CEO, Avera eCARE (now Avel eCare)

Former Avera eCARE CEO Deanna Larson also highlighted the potential to train people to take their own measurements, as providers have done during the COVID-19 crisis for pregnant patients. "Our obstetrics department is very interested in providing that supportive service," she said. "Women were trained to…support themselves in their home settings so they weren't exposed" to any chance of infection through in-person clinical contact. [17]

Conclusion

Augmenting traditional maternity care with virtual care has the potential to:

- Improves access to high-quality specialty care
- Reduces barriers for women who face unique geographical and financial challenges
- Allows providers to spend more time with their patients to uncover potential high-risk issues
- Allows patients to attend appointments where they are most comfortable – at home
- Reduces disparities among underserved populations, such as black and Hispanic women
- Closes gaps in the care cycle from prenatal to postnatal and newborn care
- Increases collaboration between healthcare providers to help solve high-risk pregnancy issues
- Enables improved timely collaboration with multiple specialists and caregivers at a lower cost when appropriate

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+ Eliminate the potential for unconscious bias with informed clinical decision making that is based on trended patient data
+ Improve access for limited english proficient and hearing impaired populations with on-demand language interpretation
+ Bridge gaps in care and quickly scale existing programs with minimal implementation time, to better support each stage of pregnancy

21 OPPORTUNITIES TO
Augment Traditional Care With Virtual Care

PRECONCEPTION

+ Reassurance for parents with readily available, easily understandable, educational material via the patient portal and prescribed care pathway

+ Ongoing access to resources that can better support conception, including access to specialists to oversee nutrition, ovulation tracking, medication management, and activity gauging

+ Ongoing clinical oversight with remote monitoring to track vitals including blood pressure, body weights, blood sugar, sleeping patterns and heart rates via smart watches or wireless medical devices.

+ Early family planning tools and educational resources

+ Ongoing access to mental health resources for patients and families struggling with infertility

PRENATAL CARE

+ Enable network expansion for community health centers and local clinics to bring Maternal Fetal Medicine (MFM) specialists from partner organizations

+ Reduce time and travel for patients by complementing required in person visits with virtual visits for average risk pregnancies

+ Proactively monitor high-risk pregnancies in the home environment with capture and self-reporting of vital signs and other biometric data (remote monitoring biometrics such as blood pressure, body weights, oxygen saturation, blood sugar, sleeping patterns and heart rates via smart watches or wireless medical devices.), and increased patient risk mitigation

+ Enable comprehensive support for complex and average-risk maternity populations by streamlining collaboration between the patient's care team (OBGYNs, Mental Health specialists, Midwives, Doulas, Labor and Delivery Teams, and

LABOR & DELIVERY

+ Deliver training and supporting resources for clinical staff to discern implicit bias, cultural differences and preferences during labor and delivery

+ Create a network of timely and readily resources to proactively help patients prepare for delivery and potential complications via patient web portal

+ Enable proactive home monitoring for high-risk patients who are at-risk for preterm labor, including those with pre-eclampsia, cardiovascular disease and those with postpartum hypertension.

+ Provide additional mental health resources for patients directly after birth, specifically those who experienced traumatic births

+ Provide access to neonatologists and specialists ahead of time and directly after birth for parents of children who are born prematurely or who have medically complex conditions

+ Increase access to lactation consultants for breastfeeding mothers directly after birth

POSTNATAL CARE

+ Establish post-partum debriefs and collaboration between patient care teams (L&D team, OBGYNs, etc) to eliminate the gaps in care for high-risk patients after discharge

+ Increase postpartum follow up for patients to rapidly identify postnatal issues like hypertension, or mental health conditions like postpartum depression, and prevent hospital readmissions before the standard 6-week checkup

+ Expand access to lactation consultants and resources for breastfeeding patients

+ Provide mental health resources for mothers before discharge to help identify and treat postpartum depression and anxiety

+ Establish or partner to provide patients with local support groups including mommy groups, etc.

+ Enable 24/7 virtual access to parents of babies

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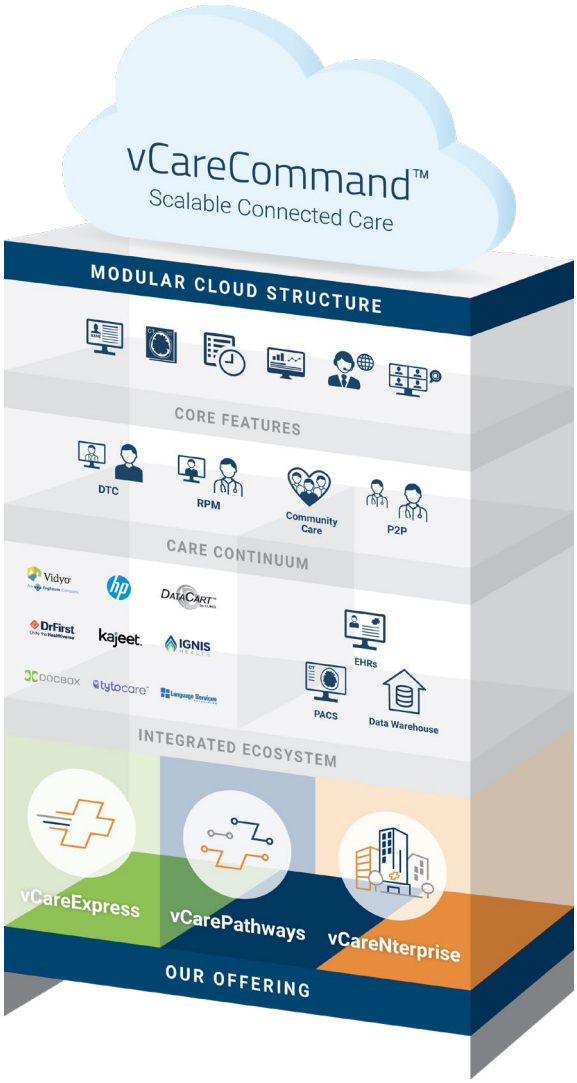

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