

Gestational Diabetes:

A Window of Opportunity to Improve Maternal and Child Health

Lessons Learned from the *Vida Nueva* project in Colombia

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GESTATIONAL DIABETES: A WINDOW OF OPPORTUNITY TO IMPROVE MATERNAL AND CHILD HEALTH

Gestational Diabetes Mellitus (GDM) refers to diabetes during pregnancy, an undertreated condition impacting nearly 18 million women every year.¹

Untreated GDM has serious consequences for maternal and newborn health, and increases the risk of developing diabetes and other non-communicable diseases (NCDs) later in life.² Timely diagnosis and treatment of diabetes in pregnancy offers an important window of opportunity—a chance to reduce short- and long-term health risks for women and children. Unfortunately, GDM has received relatively little attention as a public health priority.

Impact of GDM on Maternal and Child Health



14% of pregnancies globally

18 million live births a year¹



Short-Term Impact

Significantly increased risk of maternal morbidity and mortality due to complications such as

excessive birth weight (macrosomia), hemorrhage, hypertensive disorders, obstructed labor and infection/sepsis²

Long-Term Impact

Highly increased risk

of developing NCDs such as diabetes, obesity and hypertension²



Higher likelihood of preterm birth,

a leading cause of death in children under 5³



About **50% of mothers with GDM** develop type 2 diabetes within 5 years⁴



"The cost of inaction against NCDs outweighs the cost of action for any country in the world today."

World Health Organization Global Action Plan for the Prevention and Control of NCDs, 2013-2020

A child is up to 8 times more likely to develop type 2 diabetes if its mother had undertreated GDM⁵



ADDRESSING GDM IN COLOMBIA

Lessons can be learned from a locally-managed GDM project in Barranquilla, Colombia called "Vida Nueva" or "New Life."

The project's holistic NCD-awareness and capacity-building approach has unlocked vast resources, demonstrating that relatively small investments to integrate GDM care into existing prenatal services can significantly improve standards of care. To access the full case study, visit: http://www.worlddiabetesfoundation.org/what-we-do/pregnancy-and-diabetes-resources



Vida Nueva worked with the government to:

- 1. mandate GDM treatment guidelines for all public providers (a first in Colombia)
- 2. raise awareness among pregnant women
- **3.** build the capacity of health workers and increase quality of care
- **4.** improve patient support for Barranquilla's most vulnerable population

The rate of GDM screening for pregnant women went from 5% to 97% in three years



50-fold increase in GDM diagnosis



9 out of 10 women diagnosed with GDM received nutrition counseling



29% of women diagnosed had no risk factors for GDM, validating the need for universal screening

More than 1,250 local health workers were trained on the new GDM Guidelines



In recognition of Vida Nueva's achievements, the Colombia Ministry of Health recognized Barranguilla as a national model city for diabetes care.

^{1.} International Diabetes Federation, IDF Diabetes Atlas, 6th edn. Brussels, Belgium; International Diabetes Federation, 2013 p.44.

^{2.} Kapur A, Links between maternal health and NCDs, Best Practice & Research Clinical Obstetrics and Gynaecology. 2015 Jan; 29(1): 32-42.

^{3.} Vogel et al.: Maternal morbidity and preterm birth in 22 low- and middle-income countries: a secondary analysis of the WHO Global Survey dataset. BMC Pregnancy and Childbirth 2014 14:56

^{4.} Veeraswamy S, Vijayam B, Gupta V, Kapur A. Gestational Diabetes: The Public Health Relevance and Approach, Diabetes Research and Clinical Practice (2012) p.350-358.

^{5.} Clausen, T. D., Mathiesen, E. R., Hansen, T., Pedersen, O., Jensen, D. M., Lauenborg, J., & Damm, P. (2008). High prevalence of type 2 diabetes and pre-diabetes in adult offspring of women with gestational diabetes mellitus or type 1 diabetes the role of intrauterine hyperglycemia. Diabetes care, 31(2), 340-346.

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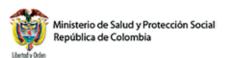
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The following organizations made the Vida Nueva project possible in Barranquilla, Colombia:





















WORLD **DIABETES** FOUNDATION







5 GESTATIONAL DIABETES VIDA NUEVA CASE STUDY

GESTATIONAL DIABETES:

Its Global Impact on Maternal and Child Health

Maternal and child health is an enduring public health priority around the world. Encouraged by the framing of the UN Sustainable Development Goals (SDGs), forward-thinking stakeholders are taking a more integrated approach, recognizing the interplay between maternal and child health, and communicable and non-communicable diseases (NCDs). NCDs, such as diabetes and hypertension, significantly complicate healthy pregnancies in the short term, as well as compound long-term health issues for both the mother and child.¹

Gestational Diabetes Mellitus (GDM) is mainly a temporary form of diabetes that occurs during pregnancy, affecting 14 percent of expectant mothers worldwide.² GDM is an underlying factor for maternal and newborn morbidity and mortality. Babies born to mothers with uncontrolled GDM are likely to be excessively large, a condition known as macrosomia, which leads to prolonged or obstructed labor and increases the risk of profuse bleeding post-delivery.² GDM also increases the risk of stillbirths, pre-term births, birth defects, and other neonatal complications.¹

An Overlooked Opportunity to Improve Maternal and Child Health

Timely diagnosis and treatment of GDM offers an opportunity to improve maternal health and pregnancy outcomes. The impact of GDM extends far beyond pregnancy: **About 50** percent of mothers with GDM develop type 2 diabetes within five years³, and if they are not treated, their children are up to 8 times more likely to develop type 2 diabetes later in life.⁴

For the long-term health of mother and child, GDM also offers a window of opportunity. Treatment during and after pregnancy can delay or even eliminate the onset of type 2 diabetes for the mother.³ For the child, successful treatment of the mother's GDM also reduces intergenerational transfer of type 2 diabetes and other NCD risk factors.¹

Universally, expectant mothers want the best possible health for their baby. This heightened state of health alertness creates a unique opportunity to impact long-term health by addressing GDM. GDM is, as a first step, managed through improvements in nutrition and exercise, which makes it a unique opportunity for intervention. The mother's increased receptiveness can create healthier lifestyle habits that last a lifetime.

Diana Torrecilla Villarreal. As a participant of the Vida Nueva project, Diana was diagnosed with GDM.



6 GESTATIONAL DIABETES VIDA NUEVA CASE STUDY

High Economic and Disease Burden

Unfortunately, GDM, like other major NCDs, receives little attention throughout many low- and middle-income countries. NCDs account for a disease burden of 50 percent in low- and middle-income countries, yet only receive 1.2 percent of development assistance for health.⁵

The lack of attention to prevent and treat NCDs, including GDM, costs countries an average of \$2.3 trillion USD in lost economic output yearly and \$500 million USD from diabetes alone.⁶ According to the World Health Organization (WHO) Global Action Plan, "the cost of inaction on NCDs outweighs the costs of action for *any country in the world*."⁷

Evidence suggests that investing in screening and treating GDM during and after pregnancy pays for itself in lower healthcare costs overall. This conclusion is supported across diverse settings – from India, where GDM affects 9.1 percent of pregnancies, to Israel, where it affects only 2.6 percent.⁸

Pregnant women waiting in line to start a training session, Simon Bolivar Clinic, Barranquilla, Colombia.



7 THE CHALLENGE VIDA NUEVA CASE STUDY

THE CHALLENGE:

The Cycle of Inaction on Gestational Diabetes

The lack of attention to GDM is often rooted in self-reinforcing challenges. Such challenges were present in the city of Barranquilla, Colombia in 2009, at the time the *Vida Nueva* project was conceived (see Figure 1):

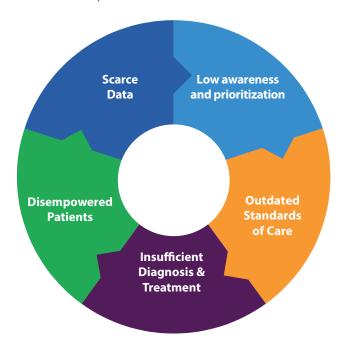
- 1 Low awareness and prioritization of GDM. The general public was largely unaware of GDM, its prevalence and its serious impact.
- Outdated standards of care. GDM was not recognized as an important maternal and child health issue. Fragmentation amongst maternal health disciplines had resulted in obsolete and neglected standards of GDM care.
- 3 Insufficient diagnosis and treatment. Lacking prioritization and standards—and facing ongoing healthcare cost constraints—physicians rarely tested for, diagnosed and holistically managed GDM.
- 4 **Disempowered patients.** Pregnant women generally did not know about the risks of GDM, request screening, or know how to manage the condition.
- Scarce data. Evidence on the impact of GDM was not captured, making it difficult to effect changes in public health priorities and practices in GDM treatment.

The coverage and quality of GDM care varied considerably around Colombia, and proper standards of care were not being followed. Without compelling data, GDM remained a low priority on the public health agenda. A catalyst for change was needed to break the cycle of inaction on GDM.

"In 2011, Colombia's maternal mortality rate was more than 50% above the Millennium Development Goal target."

— United Nations Development Program⁹

Figure 1: Cycle of Inaction on Gestational Diabetes in 2009 Barranquilla



Colombia and Barranquilla in Basic Numbers

Colombia

Population of Colombia: 47.6 million (2014) Model of Healthcare: Universal Coverage Maternal mortality rate: 39,9/100,000 (2014) Infant mortality rate: 14.1/1000 (2014)

City of Barranquilla

Population of Barranquilla: 1.4 million (2014)

Public beneficiaries: 725,000 (2014)

Public health insurers: 7
Private health insurers: 14

Caminantes: 442

Note: Barranquilla has piloted a system of community health workers (*Caminantes*) that is unique in Colombia. They aim to improve public health through what they call "induced demand" for medical services.

Sources: DANE/ Secretary of Health, Barranquilla, Colombia

8 BREAKING THE CYCLE VIDA NUEVA CASE STUDY

BREAKING THE CYCLE:

A "New Life" for Families in Barranquilla, Colombia

In 2009, the Mayor's office of Barranquilla, along with a Barranquilla-based non-profit group, Centro de Investigación Sanitaria (CIIS), became the catalyst needed to break the cycle of inaction.

The Barranquilla Mayor's office and CIIS brought together a number of local and international actors united by their concern for pregnant women impacted by GDM, including the World Diabetes Foundation, Steno Diabetes Center, and Novo Nordisk, a global healthcare company. They worked to design and secure funding for an innovative local approach to integrate GDM diagnosis and treatment into prenatal care for the city's most vulnerable population.

In 2011, *Vida Nueva* launched an ambitious plan to tackle every part of the cycle in a three-year project. At its heart, the collaboration of public, private and nonprofit actors aimed to:

- 1 Build awareness: Enhance public awareness of GDM and make GDM an integrated part of holistic prenatal care.
- Establish standards of care: Mandate consistent public health standards for diagnosis and management of GDM during prenatal care.
- 3 Increase quality of care: Build capacity of healthcare professionals to diagnose and treat GDM, thereby improving prenatal care quality.
- 4 Improve patient support: Educate pregnant women on GDM risks and actively support them in creating healthier lifestyles during pregnancy and beyond.
- **Generate evidence:** Proactively build a public evidence base to support better GDM care.

Through a broad coalition of local, national and international stakeholders, *Vida Nueva* has met or exceeded nearly all its targets in only three years. The commitment of these cross-sector actors transformed a small, limited pilot into an enduring and successful program for all of Barranquilla.

A Brief History Of Vida Nueva

2009:

Local and global stakeholders begin discussing models to address GDM challenges

2010:

World Diabetes Foundation & Novo Nordisk **fund Vida Nueva** for three years

2011:

Vida Nueva project launched through crosssector coalition; work begins to improve GDM standards of care

2012:

GDM standards of care finalized and communicated through awareness campaigns; provider training & universal screening

2013:

Barranquilla recognized by Colombia Ministry of Health as an "Area of Demonstration" for diabetes

2014:

Learning Study to capture lessons from the successful first three years

Alexandra Nunez with her son. Alexandra was diagnosed with GDM.



9 KEY ACHIEVEMENTS VIDA NUEVA CASE STUDY

KEY ACHIEVEMENTS:

Measurable Impact

Vida Nueva delivered impressive achievements in just three years:

- Successfully established a standard of care for GDM, adopted as the required norm for Barranquilla's 700,000 publicly insured citizens.
- GDM screening rate of 97 percent vs. 5 percent three years ago.
- Increased GDM diagnosis by a factor of 50
 (from 0.2 percent in 2012 to nearly 9 percent in 2014)
 Indicative data shows that nearly one-third (29%) of the women diagnosed did not have any risk factors for GDM.
- Trained 225 physicians (OB/GYN, Primary Care) on GDM standard of care, achieving 78 percent compliance¹⁰ despite high staff turnover.
- Built awareness of GDM, other NCDs and healthy living for more than 80 percent of all pregnant women within the public health system. A group of doctors and nurses noted: "Vida Nueva has helped the majority of women here. After the first GDM test, many women follow the nutrition advice and improve diet within 15 days."
- A key medical expert observed, "Pregnant women see the benefit of Vida Nueva and are talking to each other about it. They are learning how to eat properly while preventing excessive weight gain and learning basic exercise routines."
- Women also recognize the positive impact of Vida Nueva.
 As one patient shared, "When I don't eat food with sugar and eat less bread, my body feels better." Another woman added, "We have learned that we need to take care of our lives. Life is beautiful...and we want to keep moving forward."

Lastly, local health department leaders credit Vida Nueva for building public momentum for its "Barranquilla Healthy Living" initiative, improving the public health provider's broader prenatal care process and fostering collaboration on health initiatives.

"With Vida Nueva, Barranquilla has demonstrated that an investment in the infrastructure of a hospital system results in a marked improvement in the quality of care for our community."

—Elsa Noguera De la Espriella, Mayor of Barranquilla

Vida Nueva: First Three Years at a Glance

Established the first guidelines for GDM in Colombia

Detecting GDM

21,169 women screened for GDM; 1,853 diagnosed

97% of pregnant women now screened for GDM

8.8% = Rate of detection

3,600% increase in GDM detection

29% = Percentage of women with no risk factors among diagnosed, none of whom would have been screened prior to Vida Nueva

Training Providers and Educating Pregnant Women

72% = Primary care and OB/GYN personnel within the public health system trained

1,269 community health workers trained on GDM Standards of Care

4 of 5 pregnant women served in public facilities educated on GDM and healthy living, totaling 28,687

709 = Diagnosed women educated in three-day workshops

90% = Diagnosed women attending nutritional counseling

250% = Increase in patient engagement with nutritional counselors

Source: Project Vida Nueva, IPS Universitaria de Antioquia, 12/2014

VIDA NUEVA'S SHARED VALUE APPROACH:

Galvanizing Diverse Stakeholders for Powerful Action

Vida Nueva achieved its objectives through a relatively small investment that catalyzed a big change. At its core, Vida Nueva's success was driven by a dedicated, two-person project management team supported by part-time educators and specialists.

With the leadership of the Barranquilla Mayor's office, this core team progressively mobilized a robust ecosystem of volunteer professionals bringing diverse knowledge, expertise and resources. The group of stakeholders included experts from professional organizations and local universities, insurers, NGOs, public providers, and the government. Each brought unique capabilities to create, implement and enforce a new holistic GDM standard of care throughout the public health system (see Figure 2). Their contributions ultimately improved the quality of life for thousands of Barranquilla's most vulnerable pregnant women—impact that is being sustained into the future.

"Vida Nueva has trained our health professionals on the proper care of GDM, and has also taught the vulnerable population of Barranquilla's pregnant women an effective way to prevent GDM. With Vida Nueva, we have improved the quality of prenatal care

— Dr. Humberto Mendoza Charris, Project Manager, Vida Nueva

Vida Nueva Core Team—Project Management, Educators, Communicator

in Barranguilla."

Five committees organize stakeholder capabilities with Vida Nueva's five goals. The core team facilitates each committee, stakeholder engagement and accountability, and decision-making.

Steering Committee—Set vision and direction

Scientific Committee—Develop standards of care

Communications Committee—Drive awareness campaign

Training Committee—Develop educational materials

Research Committee—Coordinate GDM research

Figure 2: Shared Value—Stakeholder Contributions to Vida Nueva and Value Gained in Return



How Vida Nueva Broke the Cycle

Details on how *Vida Nueva* broke the cycle of inaction offer insightful lessons for others seeking to take action on GDM.

- 1 Built awareness of GDM and encouraged holistic prenatal care: Vida Nueva continuously focused on creating broad public awareness of GDM, its risks, and the importance of leading a healthy lifestyle. The project team used an elaborate communication strategy to reach individual target audiences in culturally relevant ways (see Figure 3 and a case study on "The Super Baby" on the next page). Its mass-media campaign educated the public. It also helped recruit key champions by messaging specific value propositions for the government and the public health community thereby enabling universal screening.
- 2 Established a standard of care: A central achievement for Vida Nueva was establishing holistic GDM diagnosis and management guidelines. Their subsequent adoption by the local government as the official standard for Barranquilla ensured sustainable impact.

To improve GDM detection, the guidelines—the first of their kind in Colombia— mandated universal screening and diagnosis, as recommended by the International Association of the Diabetes and Pregnancy Study Groups

(IADPSG).¹¹ This was a significant change from the previous approach, which used an outdated testing method to only screen high-risk women. Universal screening turned out to increase GDM detection by 36 times in Barranquilla. The guidelines also sought to improve the treatment of GDM for diagnosed women by setting standards for nutrition, physical activity, and pharmacological intervention. They emphasized important specialist visits in the prenatal care process, promoting holistic care for pregnant women with GDM.

The guidelines were drafted over several months by the *Vida Nueva* Scientific Committee, a volunteer group of medical experts and health scholars, and involved both government and public health providers to gain their support and, eventually, their official endorsement.

Increased quality of care through capacity building:

Vida Nueva focused on capacity-building for health
workers and on changing prenatal care processes in health
facilities. Through close collaboration with Barranquilla's
public health provider, complementary training for health
professionals was launched. This helped the entire system
understand the new standard of care and the importance of
holistic care and healthy living in fighting GDM. The training
has been delivered through more than 45 sessions for 920
health workers across all levels of care.

Figure 3: Communication Strategy

Message Objectives Media **Target Groups** Create awareness of GDM and healthy lifestyles **Pregnant Women** Vida Nueva 45 press releases Communicate impact of new GDM guidelines **Health Workers** and drive motivation Establish credibility and generate interest in **Experts** Vida Nueva to recruit support 12 TV news releases and 2 commercials Strengthen policymaker support by raising awareness, establishing credibility, and demonstrating alignment Government with city's health initiatives Educate on health issues related to GDM and dispel **General Public** cultural myths 18 radio announcements

"The Super Baby!"

A case study in educating the public

"A super baby has been born!" claimed a local newspaper in Barranquilla. It was a culturally proud moment—a baby weighing 5 kilos, almost 50% greater than the average—and the media only built up the excitement. However, for the *Vida Nueva* team, this was clear evidence of a seriously unhealthy baby with macrosomia.

Macrosomia, or an abnormally large baby, is a condition that can occur due to GDM. *Vida Nueva* realized that the media frenzy around the "super baby" could be an important moment to educate pregnant women, health workers, and the general public. The team used media outlets to respond to the story—this time, with correct information on the risks of macrosomia and GDM.

Vida Nueva continued to use this news story to dispel cultural myths on large babies during educational workshops with pregnant women, as well as with doctors, nurses, and other health workers.

Source: Vida Nueva; El Heraldo newspaper, 30 July 2013.

Simultaneously, Barranquilla's public health provider agreed to adapt prenatal care processes to promote higher quality, integrated maternal care, which included GDM. In addition to universal screening, the provider incorporated:

- · specialist visits into its prenatal care process;
- quality control processes to ensure adherence to the new standard of care;
- community health workers as key influencers for appropriate care-seeking for pregnant women;
- technology updates to reduce risk of human error.
- Improved holistic patient support: An important component of *Vida Nueva* was providing patients with personalized health education and support. *Vida Nueva* created education workshops to equip all pregnant women in Barranquilla with basic knowledge about GDM and other pregnancy risks. The workshops highlighted the importance of good nutrition, physical activity and mental health in improving their own health and the health of their baby. Additional education was offered to women diagnosed with GDM, providing in-depth information and personalized guidance from staff, including nutritionists, health workers, physical therapists and psychologists.

A health check at the Simon Bolivar clinic, Barranquilla, Colombia.



Vida Nueva staff and community health workers worked hand-in-hand to support pregnant women throughout the entire prenatal care process. Community health workers played a vital role, not only to encourage women to attend workshops and keep their doctor's appointments, but also to address cultural, administrative and socio-economic barriers to access care. For instance, women unable to attend group workshops received training and support in their own homes.

enabled GDM testing of over 21,000 pregnant women. 1,853 (or approx. 8.8 percent) women were diagnosed with GDM. Indicative data shows that nearly one-third (29 percent) of the women diagnosed did not have any risk factors for GDM. Although this kind of prevalence data has not yet been analyzed as part of a formal clinical study, in the absence of other data it has been made available to local policymakers to shape local and national health policy. *Vida Nueva* also hopes that researchers will use the available data to influence policy and investments to support GDM diagnosis and treatment.

Significant Value from a Small Investment

The Vida Nueva shared value approach has been able to leverage a small catalytic financial investment to deliver an enduring and broad-reaching impact. Funding enabled a dedicated core team to focus on identifying and articulating a shared value proposition to mobilize all actors. The total value in terms of volunteer contributions of time, expertise and logistical support easily multiplies the seed investment many-fold. Key to the sustainability of the collaboration was the shared value proposition—all stakeholders received different, but compelling benefits by contributing to the ecosystem.

Next Steps for Vida Nueva

As the initial three years of pilot funding ended in late 2014, *Vida Nueva* has accomplished or exceeded many of its objectives to break the cycle of inaction on GDM.

Yet, Vida Nueva continues as an institutionalized approach with local ownership that will provide benefits for many more pregnant women and their children. Its initial investment in stakeholder engagement, standards of care creation, tool development and embedded processes promote continuity and sustainability of impact. Even without additional funding, local stakeholders remain highly committed to the program and plan to continue their work in support of women with GDM.

Looking to the future, *Vida Nueva* plans to strengthen capability for post-partum follow-up of GDM-diagnosed mothers and their children. Additionally, the *Vida Nueva* core team is working to tabulate data captured within the public health system to encourage future studies on epidemiology and care efficacy. In Barranquilla, municipal authorities intend to expand implementation of the standard of care beyond the public health system to reach the 36 percent of Barranquilla's citizens who are privately insured. Finally, influenced by Barranquilla's successes, the Ministry of Health of Colombia is leading efforts to establish a national standard of care for GDM.

Although local and national circumstances vary, *Vida Nueva's* shared value approach is worthy of consideration for local adoption, in Colombia or elsewhere around the world.

Readers interested in learning more about *Vida Nueva's* methodology, processes, obstacles and success factors can visit: http://www.worlddiabetesfoundation.org/what-we-do/pregnancy-and-diabetes-resources.

Women with GDM learn how to exercise at the Simon Bolivar clinic, Barranquilla, Colombia.



ADVANCING MATERNAL & CHILD HEALTH WITH GDM:

Five Steps to Breaking a Global Cycle Locally

GDM is a serious health issue throughout the world and the case study of *Vida Nueva* is important to inspire further integration of GDM into maternal and child health care. Stakeholders, driven by the UN Sustainable Development Goals, are recognizing the significance of an integrated approach to tackling such health issues. GDM presents a unique window of opportunity to improve maternal and newborn health in the short term, while reducing the growing NCD epidemic in the long term.

Vida Nueva demonstrates that, even with a relatively small catalytic investment, it is possible to mobilize stakeholders to make sustainable advances in maternal and child health by improving standards of care. The shared value approach brought a high standard of GDM care into prenatal care services for tens of thousands of vulnerable women; hopefully, in the long run, this will reduce the risk of the intergenerational transfer of NCDs..

"The Vida Nueva project—the first of its kind in the country—led to the development of clinical practice guidelines for gestational diabetes. It will undoubtedly generate a positive impact for maternal and newborn health in Colombia, allowing for timely diagnosis and appropriate treatment of diabetes in pregnant women, as well as health promotion, disease prevention, and changes in lifestyle for this vulnerable population."

—Dr. Rodrigo Restrepo, Division of Non-Communicable Diseases, Ministry of Health, Colombia

Five Principles to Consider when Establishing a GDM Project

Vida Nueva's approach could inspire policymakers, healthcare providers or other stakeholders seeking to tackle GDM and NCDs in other regions of the world. Five principles learned provide useful guidance.

- Universal screening is key: The Vida Nueva project demonstrated that unless universal screening is applied, as many as 1/3 of women with GDM could go undetected. A pregnant woman could easily have GDM without presenting any risk factors.
- 1 Integrate GDM screening and care into maternal and child health services: Making GDM screening and management an integral part of maternal and child health services increases the likelihood that all women will be screened and, if necessary, receive proper treatment for GDM.
- Engage community health workers: Community health workers can play a crucial role with regards to raising awareness, making referrals for screening, and following up after diagnosis, thereby ensuring higher compliance is achieved.
- Empower pregnant women: Knowledge is power and the first step to change. Informing pregnant women about GDM and its consequences, as well as the positive impact of lifestyle changes, empowers pregnant women to take control over their own health and that of their baby.
- Mobilize diverse stakeholders around a shared value proposition led by a strong local team: Foster engagement by identifying and clearly communicating the contributions that different partners can make, and the value they can gain from a GDM initiative.

15 CONCLUSION VIDA NUEVA CASE STUDY

References

Cited Secondary Literature:

1. Kapur A, Links between maternal health and NCDs. Best Practice & Research Clinical Obstetrics and Gynaecology. 2015 Jan; 29(1): 32-42

- 2. International Diabetes Federation. IDF Diabetes Atlas, 6th edn. Brussels, Belgium: International Diabetes Federation, 2013 p.44.
- 3. Veeraswamy S, Vijayam B, Gupta V, Kapur A. Gestational Diabetes: The Public Health Relevance and Approach, Diabetes Research and Clinical Practice (2012) p.350-358.
- 4. Clausen, T. D., Mathiesen, E. R., Hansen, T., Pedersen, O., Jensen, D. M., Lauenborg, J., & Damm, P. (2008). High prevalence of type 2 diabetes and pre-diabetes in adult offspring of women with gestational diabetes mellitus or type 1 diabetes the role of intrauterine hyperglycemia. Diabetes care, 31(2), 340-346.
- 5. Institute for Health Metrics and Evaluation. Financing Global Health 2013: Transition in an Age of Austerity. Seattle, WA: IHME, 2014
- 6. Bloom D, Cafiero E. et al., The Global Economic Burden of Noncommunicable Diseases. Geneva: World Economic Forum. 2011.
- 7. Action Plan for the Prevention and Control of NCDs 2013 2020, World Health Organization [accessed on 20 Jan 2015].
- 8. Marseille E, Lohse N, Jiwani A, Hod M, Seshiah V, Yajnik CS, Arora GP, Balaji V, Lieberman N, Chen R, Damm P, Metzger BE, Kahn JG. The cost-effectiveness of gestational diabetes screening including prevention of type 2 diabetes: application of a new model in India and Israel, J Matern Fetal Neonatal Med, 2013; 26(8): 802–810.
- 9. Objetivos de Desarrollo del Milenio Colombia 2014. United Nations Development Program.[accessed 24 March 2015].
- 10. Note on compliance: Rate of compliance is measured through a monthly auditing process of physicians in the public health system in Barranquilla. The clinical history for each pregnant woman is reviewed to ensure the criteria for testing GDM have been met.
- International Association of Diabetes and Pregnancy Study Groups.
 Recommendations on the Diagnosis and Classification of Hyperglycemia in Pregnancy. International Association of Diabetes and Pregnancy Study Groups.
 Consensus panel. Diabetes Care. 2010 Mar; 33(3)

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Primary Sources—Interviews

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Accenture is a global management consulting, technology services and outsourcing company, with more than 305,000 people serving clients in more than 120 countries. Accenture Development Partnerships collaborates with organizations working in the international development sector to help deliver innovative solutions that truly change the way people work and live. Its awardwinning business model enables Accenture's core capabilities its best people and strategic business, technology and project management expertise-to be made available to clients in the international development sector on a not-for-profit basis.

"The project directly addresses some of the most pressing needs of patients. The work is of broad significance for all regions demonstrating that targeted patient support services can directly drive marked improvements in patient outcomes and shows promise to lower overall healthcare costs for a population."

— Jeff Elton, Ph.D., Patient Health and Predictive Health Intelligence Lead, Accenture Strategy

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About the Alcaldía de Barranquilla (Municipality of Barranquilla)

Barranquilla, located in the northern region of Colombia, is the fourth largest city in the country. It has been recognized as a leader in innovative health and education models in Colombia.

Website:

http://www.barranquilla.gov.co

Twitter: @alcaldiabquilla

About The World Diabetes Foundation

The World Diabetes Foundation is an independent trust dedicated to the prevention and treatment of diabetes in the developing world.

Website:

www.worlddiabetesfoundation.org

Twitter: @WorldDiabetesF

About Novo Nordisk

Novo Nordisk is a global healthcare company with more than 90 years of innovation and leadership in diabetes care. Changing Diabetes® is our commitment to improving life for people with diabetes. This means developing and delivering individualised treatments and advocating for better healthcare for everyone. Sharing good practices from projects around the world, like the *Vida Nueva* project in Colombia, is part of our efforts to improve access to diabetes care globally.

Headquartered in Denmark, Novo Nordisk employs more than 41,500 employees in 75 countries, and markets its products in more than 180 countries.

Discover more about Novo Nordisk and our Changing Diabetes® initiatives at:

Website:

www.novonordisk.com/sustainability

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