*5th symposium on diabetes in humanitarian crises*

# Plenary 3: Diabetes in Pregnancy in Humanitarian Settings – Status, Needs, and Next Steps

*Moderator*

Philippa Boulle

iada | International Alliance for Diabetes Action

16 October 2025

# Plenary Objectives

This plenary session aims to:

1. **Explain the needs around diabetes in pregnancy** and its implications on foetal-maternal health
2. **Map the current state of practice and identify barriers and challenges** with screening and managing diabetes in pregnancy in humanitarian settings.
3. **Define a way forward**, outlining short-term feasible actions, medium- term research priorities, and long-term advocacy goals for DIP inclusion in humanitarian health packages.

1. Overview of diabetes in pregnancy and implications on fetal-maternal health

2. Lived experience navigating pregnancy in a crisis context

3. Humanitarian implementation - DIP guidelines in Lebanon and Kiribati: practical experiences

4. Humanitarian operations – UNRWA’s experience implementing diabetes and pregnancy care

5. Moderated discussion

7. Audience Q & A

# Diabetes in Pregnancy

Overview and Significance

# Definitions

| | |
|---|---|
| **Pre-existing diabetes** | Type 1 diabetes<br>Type 2 diabetes<br>(monogenic diabetes, others) |
| **Diabetes in Pregnancy** | Hyperglycemia diagnosed during pregnancy (typically first trimester) that meets WHO criteria of diabetes in non-pregnant individuals |
| **Gestational diabetes** | Hyperglycemia diagnosed during pregnancy (typically second or third trimester) that is not clearly overt diabetes prior to gestation or during pregnancy |

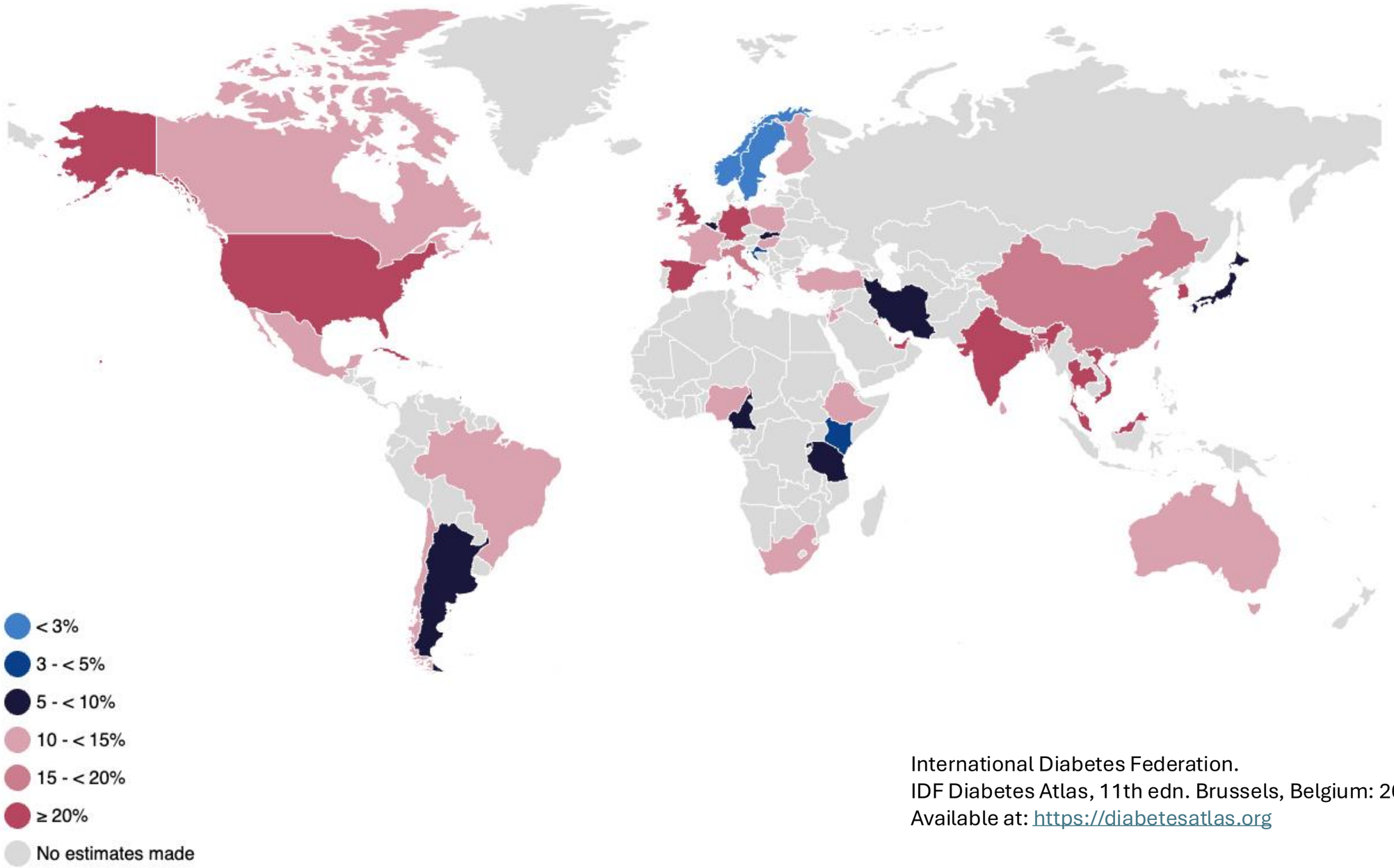
# GDM Diagnostic Criteria

| Criteria | Fasting (mg/dL) | Fasting (mmol/L) | 1-hour (mg/dL) | 1-hour (mmol/L) | 2-hour (mg/dL) | 2-hour (mmol/L) | 3-hour (mg/dL) | 3-hour (mmol/L) |
|---|---|---|---|---|---|---|---|---|
| NDDG (USA)* | 105 | 5.9 | 190 | 10.6 | 165 | 9.2 | 145 | 8.1 |
| **Carpenter Coustan (USA)*** | 95 | 5.3 | 180 | 10.0 | 155 | 8.6 | 140 | 7.8 |
| **CDA** | 95 | 5.3 | 191 | 10.6 | 160 | 9.0 | - | - |
| WHO 1985 | 140 | 7.8 | - | - | 140 | 7.8 | - | - |
| WHO 1999 | 126 | 7.0 | - | - | 140 | 7.8 | - | - |
| **IADPSG / ADA / WHO / FIGO** | 92 | 5.1 | 180 | 10.0 | 153 | 8.5 | - | - |
| **DIPSI (non-fasting)** | - | - | - | - | 140 | 7.8 | - | - |
| **NICE (UK)** | - | 5.6 | - | - | 140 | 7.8 | - | - |

*2 step strategy (50-g glucose load for screening, 100-g OGTT for diagnosis)

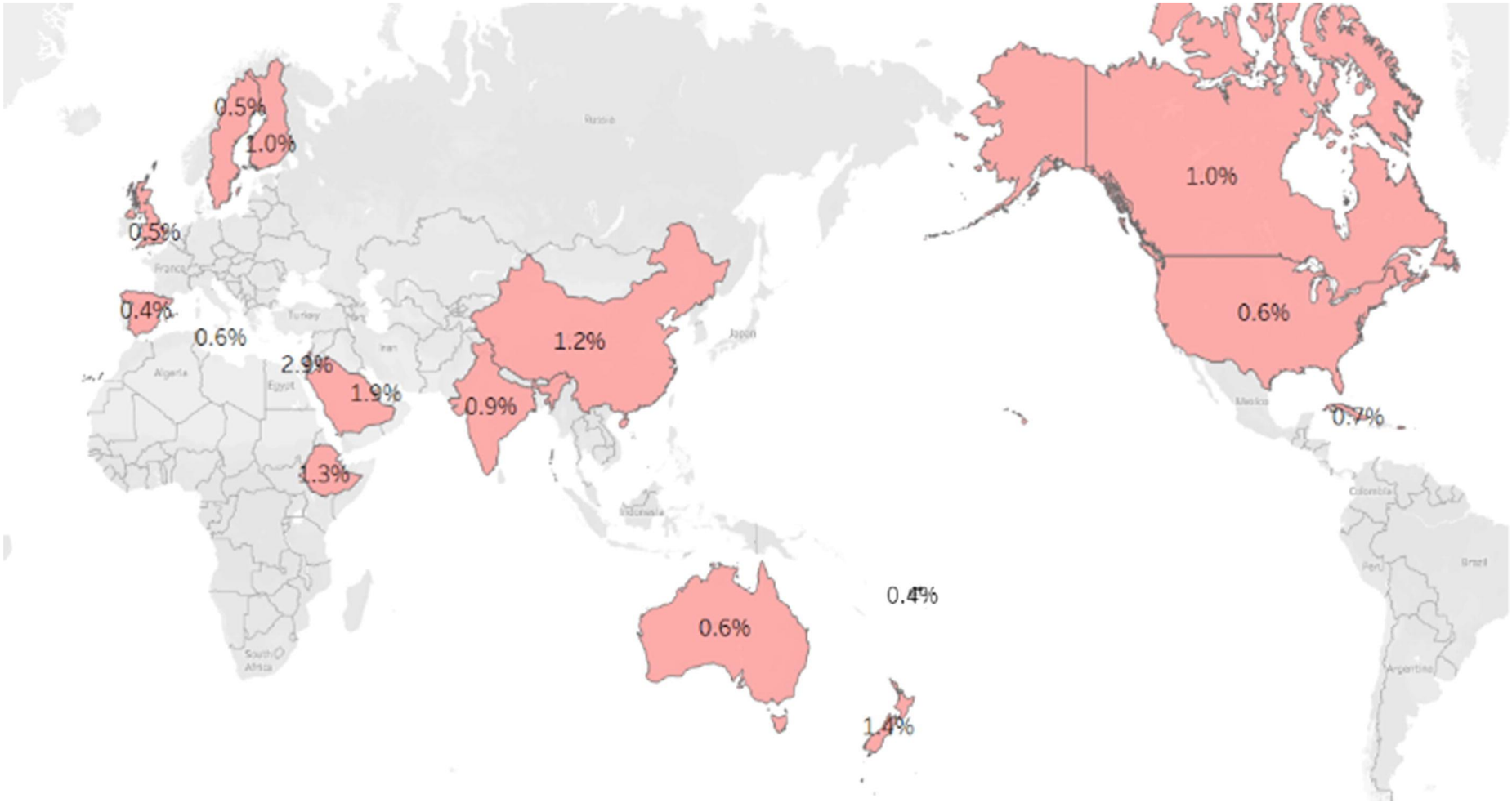
Adapted from:
International Diabetes Federation. IDF Diabetes Atlas, 11th edn. Brussels, Belgium: 2025. Available at: https://diabetesatlas.org

# Prevalence of gestational diabetes mellitus (GDM), % by Country/Territory



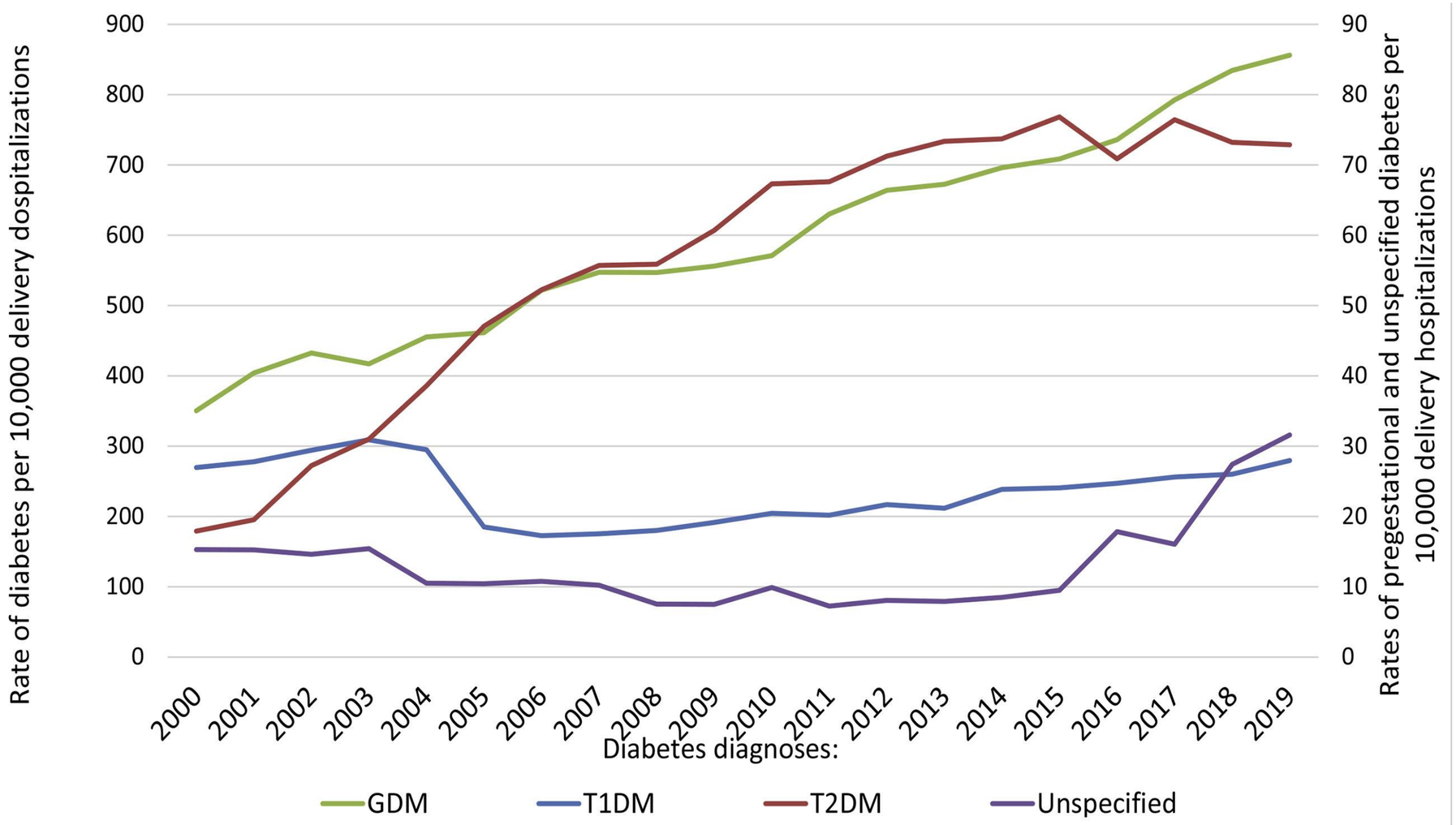

International Diabetes Federation.
IDF Diabetes Atlas, 11th edn. Brussels, Belgium: 2025.
Available at: https://diabetesatlas.org

# Pre-existing diabetes prevalence



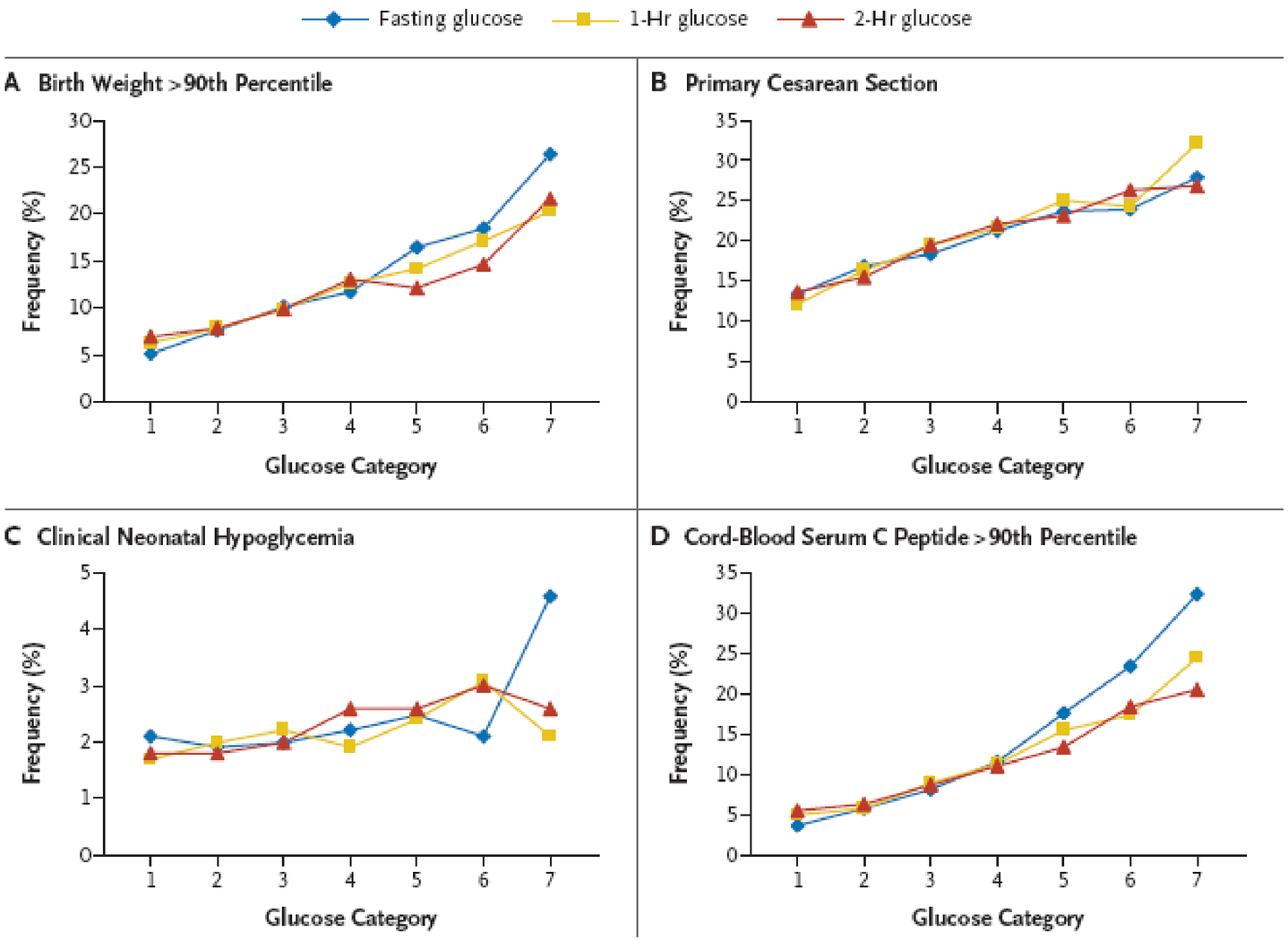

Chivese T, Hoegfeldt CA, et al. IDF diabetes atlas: the prevalence of pre–existing diabetes in pregnancy – a systematic review and meta-analysis of studies published during 2010–2020. *Diabetes Res Clin Pract*. 2022; 183:109049

# GDM and T2DM rapidly increasing




Gorsch L et al. Trends in delivery hospitalizations with pregestational and gestational diabetes mellitus and associated outcomes: 2000–2019 *American Journal of Obstetrics & Gynecology* 2023 22963.e1-63.

# Maternal glucose tolerance and outcomes




HAPO Study Cooperative Research Group. Hyperglycemia and adverse pregnancy outcomes. N Engl J Med. 2008 May 8;358(19):1991-2002.

# Impact of “mild” GDM

| Outcome | Treated % | Untreated % |
|---|---|---|
| Pregnancy-induced hypertension | 8.6 | 13.6 |
| Preeclampsia | 2.5 | 5.5 |
| Cesarean delivery | 26.9 | 33.8 |
| Macrosomia | 5.9 | 14.3 |
| Birth trauma | 0.6 | 1.3 |
| Jaundice | 9.6 | 12.9 |
| Hypoglycemia | 16.3 | 15.4 |

Landon MB et al. A multicenter, randomized trial of treatment for mild gestational diabetes. NEJM 2009 Oct 1;361(14):1339-48.

# Impact of pre-existing diabetes

| Outcome | No Diabetes N=773,751 | Type 1 Diabetes N=1,125 | Type 2 Diabetes N=10,136 | RR [95% CI] |
|---|---|---|---|---|
| Miscarriage, % | 19.7 | 17.9 | 25.2 | 0.91 [0.80–1.67]; 1.28 [1.24–1.32] |
| Any congenital malformation, % | 13.4 | 18.5 | 19.0 | 1.38 [1.15–1.67]; 1.42 [1.33–1.51] |
| Any congenital heart defect, % | 3.2 | 8.9 | 6.9 | 2.80 [2.10–3.73]; 2.16 [1.92–2.41] |
| Intrauterine fetal demise, % | 0.3 | 0.4 | 0.8 | 1.47 [0.55–3.92]; 2.50 [1.94–3.26] |
| Hypertensive disorders of pregnancy, % | 28.2 | 47.4 | 55.4 | 1.68 [1.56–1.81]; 1.97 [1.92–2.01] |
| Macrosomia, % | 4.6 | 11.0 | 6.6 | 2.38 [1.85–3.07]; 1.43 [1.27–1.61] |
| Cesarean delivery, % | 27.4 | 52.5 | 48.5 | 1.92 [1.79–1.82]; 1.37 [1.35–1.38] |

Modified from Jovanovič L et al. Diabetes Metab Res Rev. 2015; 31(7):707–716

# Recommended care: type 1 diabetes (pregnancy)

- Preconception/interconception care
- Foundation: lifestyle, diabetes self management skills, addressing health related social needs
- Pump (CSII) or automated insulin delivery (AID) system (preferred), if multiple daily insulin injections (MDII), offer connected pen; HCL systems may have benefit
- CGM
  - Pregnancy-specific range 63-140 mg/dL, goal time in range (TIR) >70%
- Low dose aspirin
- Blood pressure control (target <140/90 mmHg)
- Obstetric monitoring and risk-based delivery planning

American Diabetes Association Standards of Medical Care in Diabetes, 2025
Preexisting Diabetes and Pregnancy: An Endocrine Society and European Society of Endocrinology Joint Clinical Practice Guideline, 2025

# Recommended care: type 2 diabetes (pregnancy)

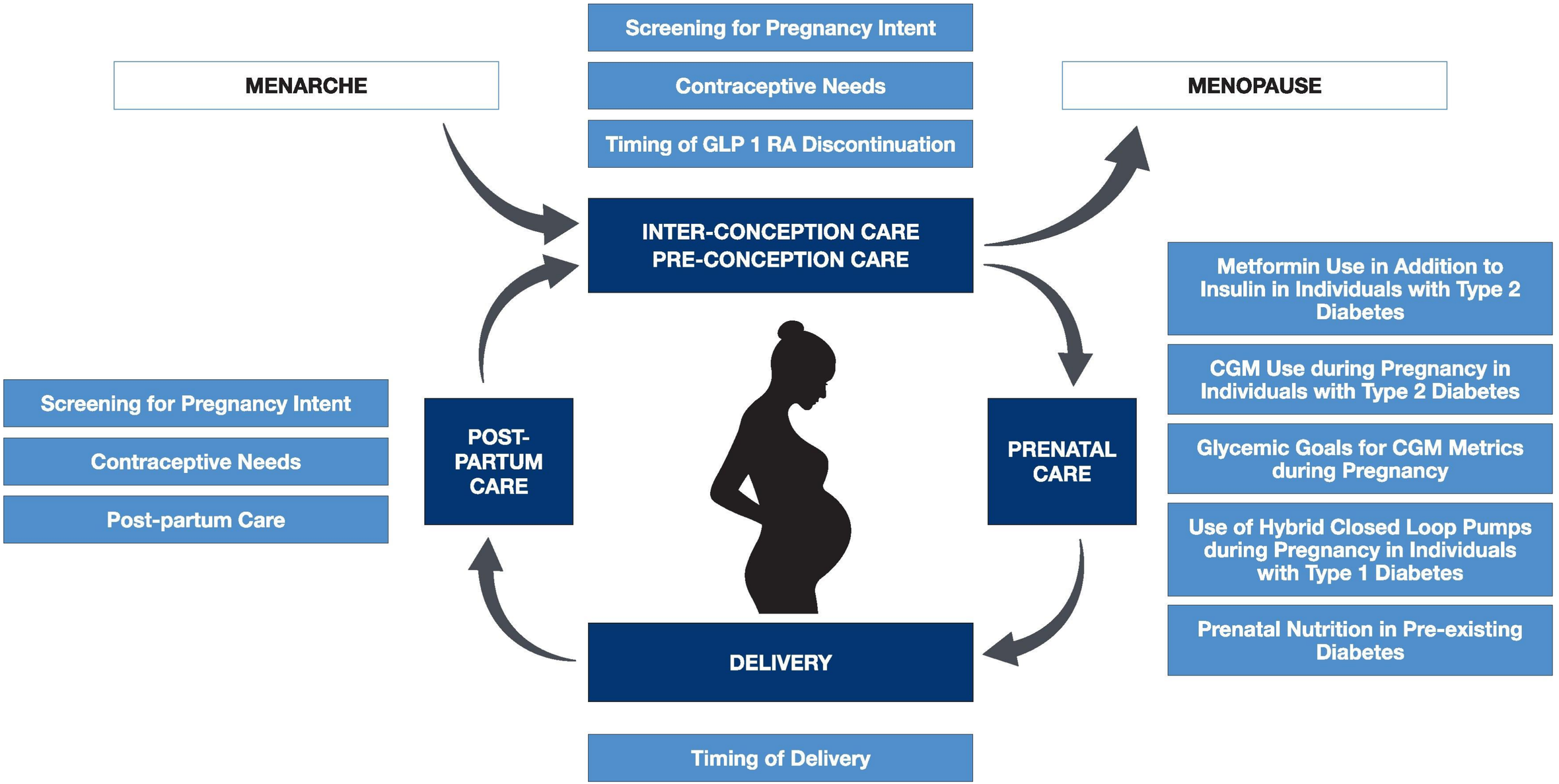
- Preconception/interconception care
- Foundation: lifestyle, diabetes self management skills, addressing health related social needs
- MDII, pen preferred to syringe for insulin delivery
- No routine use of metformin
- CGM (preferred?) or self-monitoring of blood glucose
- Low dose aspirin
- Blood pressure control (target <140/90 mmHg)
- Obstetric monitoring and risk-based delivery planning

American Diabetes Association Standards of Medical Care in Diabetes, 2025
Preexisting Diabetes and Pregnancy: An Endocrine Society and European Society of Endocrinology Joint Clinical Practice Guideline, 2025

# Recommended care: GDM

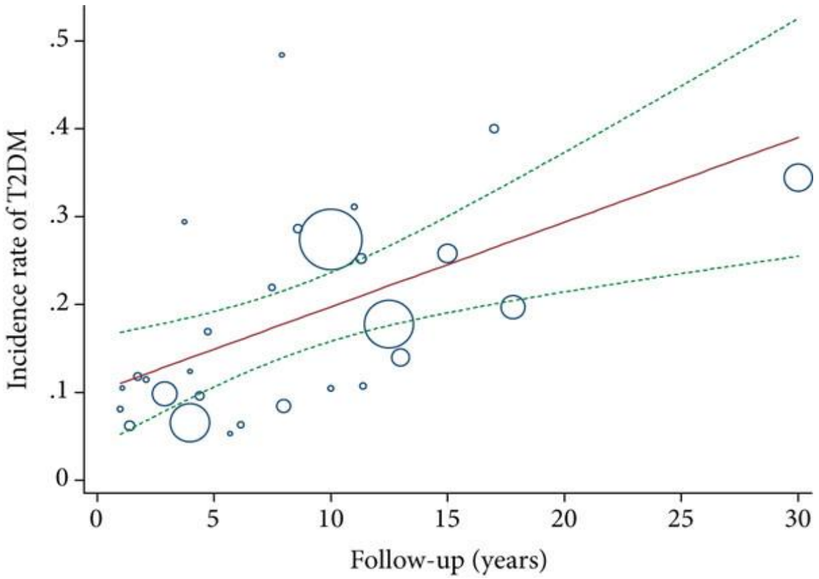
- Foundation: lifestyle, diabetes self management skills, addressing health related social needs
- Self-monitoring of blood glucose
- Insulin (preferred*) or metformin if medication indicated
- Obstetric monitoring and risk-based delivery planning
- Postpartum screening for overt diabetes and prediabetes
- Ongoing screening and diabetes prevention strategies

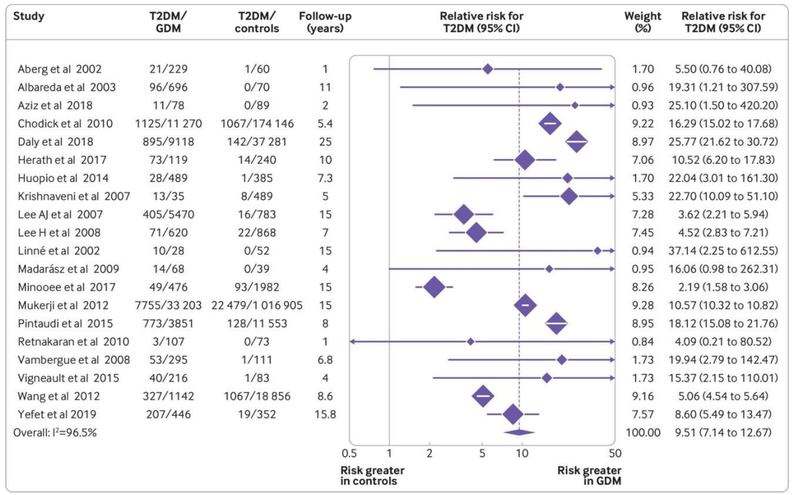
American Diabetes Association Standards of Medical Care in Diabetes, 2025




Preexisting Diabetes and Pregnancy: An Endocrine Society and European Society of Endocrinology Joint Clinical Practice Guideline. *J Clin Endocrinol Metab*, Volume 110, Issue 9, September 2025, Pages 2405–2452, https://doi.org/10.1210/clinem/dgaf288

# GDM indicates high risk for T2DM




Cost effectiveness analysis:
For every 100,000 pregnancies screened, screening would prevent:

- 85 cases of shoulder dystocia
- 262 cases of preeclampsia
- 688 cases of future diabetes

At a cost of $20,336 per QALY gained (2011 $US)

IADPSG recommendations are cost-effective ***only when postdelivery care reduces diabetes incidence***.


Li *J Diabetes Research* 2020
Vounzoulaki *BMJ* 2020
Werner EF *Diabetes Care* 2012

# Care delivery is complex, fragmented, and incomplete even in highly-resourced settings


united nations relief and works agency
for palestine refugees in the near east

وكالة الأمم المتحدة لإغاثة وتشغيل
لاجئي فلسطين في الشرق الأدنى

# Maternal Health Services in Gaza

unrwa
الاونروا

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# Maternal Health Services in Gaza

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# Maternal Health Services in Gaza


SPORT
13
كتيب صحة الأم والطفل
Mother and Child Health Handbook

unrwa
الاونروا

# Thank you

# DIABETES IN HUMANITARIAN CRISES


Plenary 3

## Diabetes in Pregnancy in Humanitarian settings

## Status, needs, and next steps

Oct 16th, 2025

**Nelly Staderini**

Sexual & Reproductive Health Advisor

Medical leader of Women and Children's Health Unit

Medical Department, Médécins sans frontieres, HQ,Geneva

# Pratical experiences MSF

- Sexual and Reproductive Health (SRH) Portfolio
- MSF Data / 2025
- History/ Background Diabetes in Pregnancy
- Experience sharing
- Perspectives

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# Sexual and Reproductive Health (SRH) Portfolio

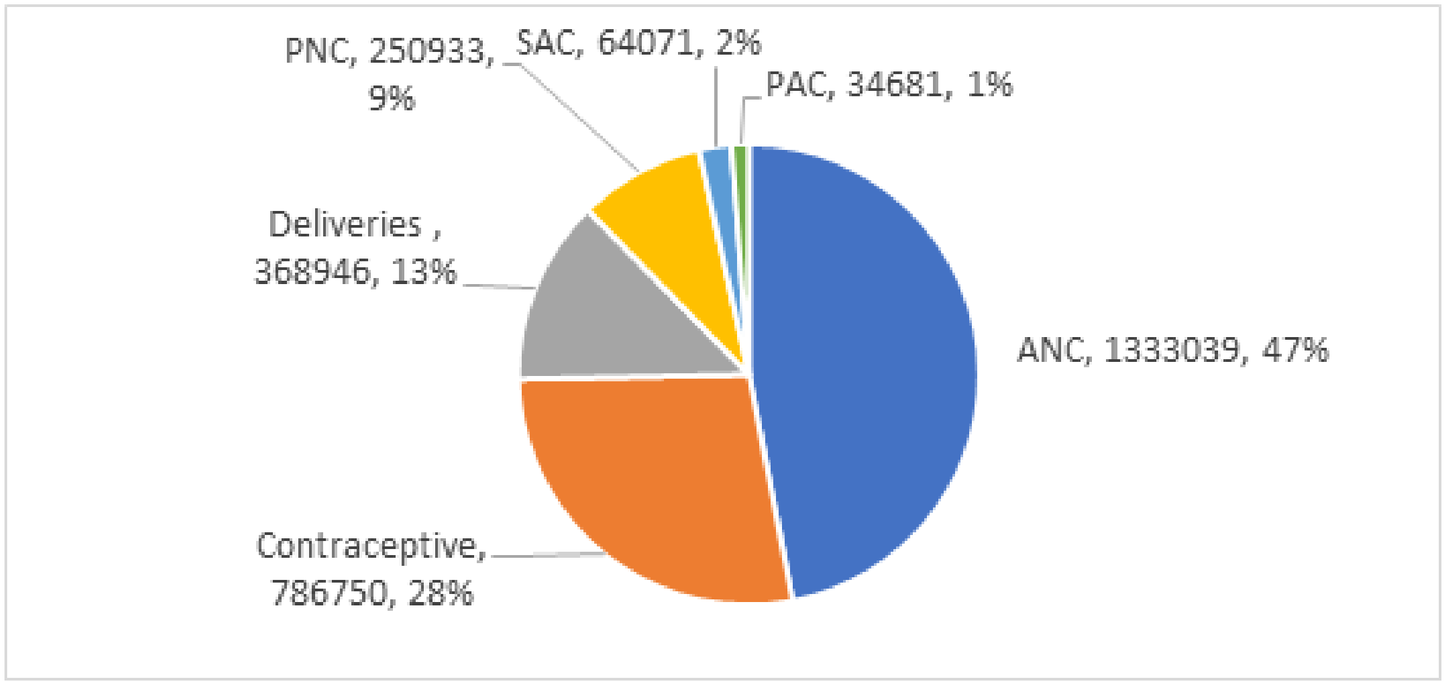
In 2024, sexual and reproductive health (SRH) consultations were provided in **237** MSF projects

Across the movement, **antenatal care (ANC) consultations accounted for 47% of all SRH** activities in 2024, followed by **contraceptive services (28%), deliveries** including caesarean sections **(13%), postnatal care (PNC) consultations (9%), safe abortion care (SAC) (2%),** and **post-abortion care (PAC) (1%)**.

This **continued growth underscores MSF's sustained commitment** to offering free and accessible care for women worldwide.

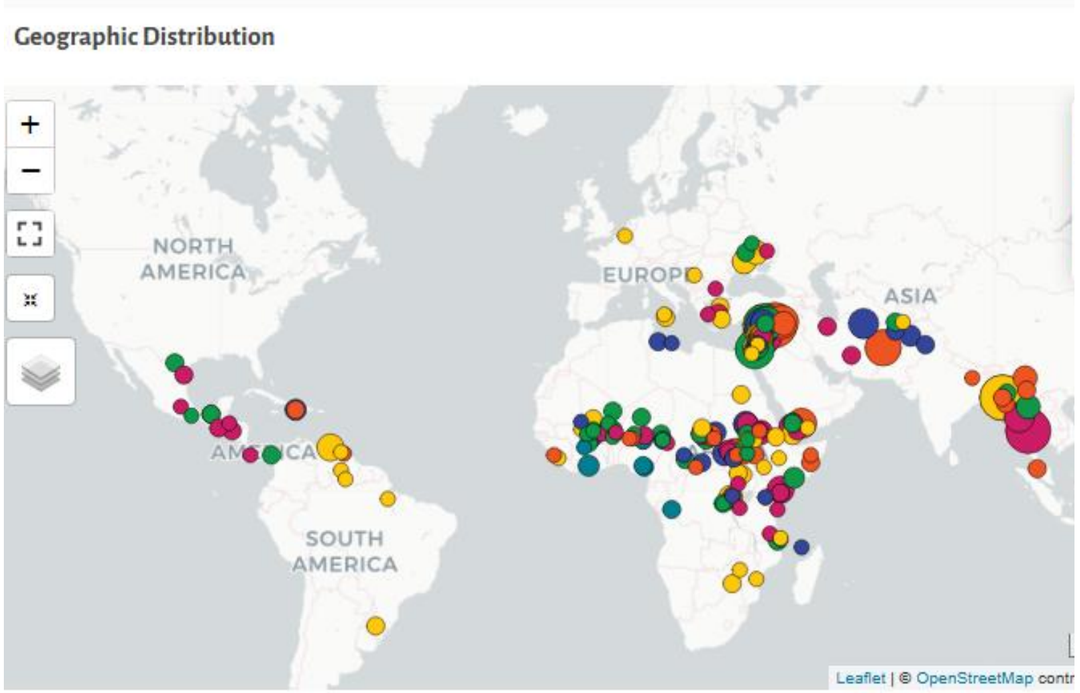
# MSF Data SRH / 2025

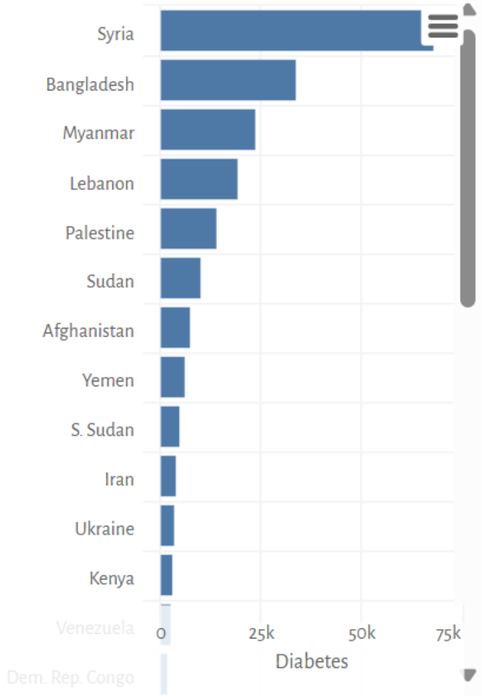
Total 2 838 420 consultations




# MSF data Diabetes / 2025

Total 213 838 Consultations

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# History/ Background
# Diabetes in Pregnancy

- Interest started with the Middle East/Syrian Refugees in Lebanon crisis in 2012
- Ad hoc guidance and protocol/ context
- Formalization intersection MSF guidance
- Development of training modules
- Integration into Care
- Still few experiences
- No full scale up so far

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# Training Module

- NCD: with list of diseases ( focus HBP & DB) with **risk factors and impact**

( potential chronicity/GDM)

- **Tools** available
- DB: **Prevalence**/ contexts
- **Diagnosis algorythm**

- Ideally 1 Trimester glycemia to exclude preexisting diabetes

- OGTT 24 to 28 weeks

- **Treatment** Metformine +/- insulinotherapy if needed
- Follow up glycemia/ Pregnant women education
- **Foetal Ultra Sound** Monitoring 32 weeks ( monthly/ growth and morphology)
- Planification / **delivery**/ induction 38-39 weeks/ secure CS access
- **Labor monitoring**/ glycemia +/- glucose 5% / Insuline
- **Neonatal** complications
- Follow up Neonat/ potential risk/ development
- **Nutrition**& life style emphasis

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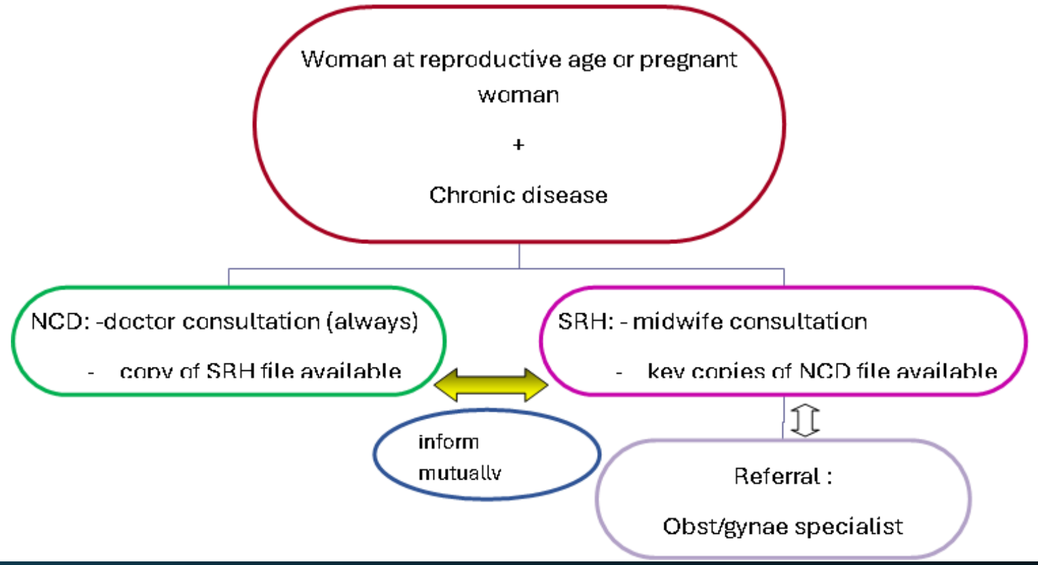
# Experience sharing

**Lebanon**

- Integrated care into SRH/ANC and collaboration with NCD team, following protocols but no data to share/ activities ( no proper indicators in place)
- Transition phasing from MSF stand alone clinic to MoH Integration ( after recent emergency times)

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# Kiribati ambition

**Kiribati** ( Pacific Island)
Started in 2023, ongoing pilot, focus community HBP screening and reference
2025: start Hospital based care including monitoring of cases to see outcomes for HPB and BD

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| Objectively Verifiable Indicators | |
|---|---|
| Indicator 1: % of cohort who attend all ANC visits (8 ANC visits as per MHMS guideline) | >90% |
| Indicator 2: % of PIH patients maintain BP <140/90 mmHg | >85% |
| Indicator 3: % GDM patients maintain a random blood sugar <11.1mmol/L | >75% |
| Indicator 4: % of women who attend ANC visit at 26 weeks for OGTT (MHMS standard is 24, 28 and 30 weeks for GDM screening) | >90% |
| Indicator 5: # of referrals to TCH for GDM management | No target / monitoring |
| Indicator 6: # of HH with malnourished MAM/SAM 6-59 months and women of CBA with MUAC >31cm | No target / monitoring |

| | |
|---|---|
| Indicator 4: % of diagnosed GDM or PIH women attend all ANC scheduled visits | >70% |
| Indicator 5: % of diagnosed GDM or PIH women maintain medication compliance | 95% |
| Indicator 6: % of GDM patients defaulting from clinic follow up visits | <30% |
| Indicator 7: % of PIH patients defaulting from clinic follow up visits | <30% |

# Kiribati Results

- A total of 888 women of child-bearing age from the 12 villages in Abaiang were screened (61%).
- **Prevalence of known diabetes** in the population (of women of child-bearing age) surveyed was **7.9%.**
- **1.9%** of the women screened, in whom there was no known history of existing diabetes, was noted to have a random BSL of >11, possibly indicating **undiagnosed diabetes.**
- **62.2%** of the women screened with a **known history** of diabetes was noted to have a random BSL >11, possibly indicating **poor or sub-optimal control** of their diabetes.

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# Latest report

- Only 10 out of 58 pregnant women **(17%)** have completed the recommended four ANC visits
- New strategy for ANC attendance: strengthening **community involvement**
- Engaging **women's groups** community leaders, and other influential local actors to **raise awareness** and encourage pregnant women to attend ANC services
- FGDs: many pregnant women do **not fully understand** the importance of attending ANC visits
- Need for community-based **education and mobilization**, particularly through **women-led initiatives**, to ensure that all expectant mothers are informed and supported throughout their pregnancy journey

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- All clinics has **OGTT supplies** in stock and in date
- Only 1 nurse was able to complete a test
- Encourage the women to attend ANC at the specified **time for OGTT**
- **HP sessions** can be conducted for this in the following month
- Refresher **training**: improvement in performance during August **but** decline again in September ( initial impact of the training was not sustained)

# Kiribati challenges

- **Shortage of Midwifes** since Midwifery school was closed some years back, Nurses working as midwifes to cover the gaps
- **Poor record keeping** since there are different books used for delivery registration
- **No data collection tools** and therefore no monthly data is collected or aggregated every month
- **Poor documentation on the patients files** where most of the files are incomplete or missing pages since there is no proper patient files
- Most of the time **OGTT administered is not recorded** in the book
- **Not all results are indicated** if negative or positive
- Not all patients are given OGTT since the staff are **rationing** as they fear to have rupture. It was discussed with the staff to report on time so that MSF can provide until the MHMS receive their order.

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A child receives antibiotics by Batiua, a medical assistant two days after being admitted at the clinic. This was the last dose that the clinic had. Kiribati, January 2025.

# Perspectives

- New MSF Obstetric Guideline including:
- Screening for Preexisting diabetes or GDM if feasible
- Dissemination of algorithm & Protocol
- Continue training including / thematic
- Push for integration into routine care

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# Thanks

Nelly.staderini@geneva.msf.org

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