

A CASE FOR UNIVERSAL SCREENING FOR DIABETES IN PREGNANCY IN TRINIDAD AND TOBAGO

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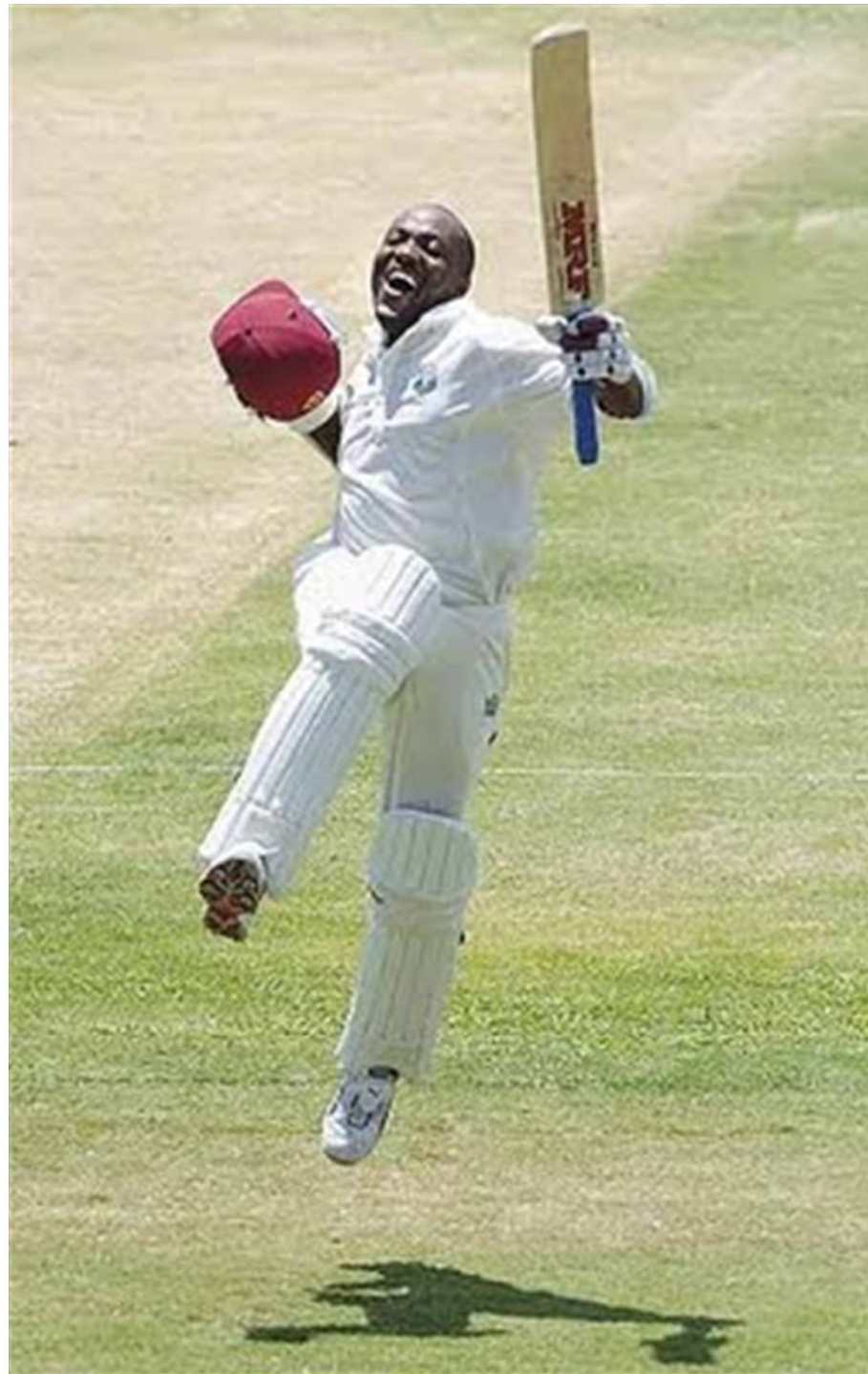


THE UNIVERSITY OF THE WEST INDIES
AT ST. AUGUSTINE, TRINIDAD AND TOBAGO

2nd October 2013















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T&T world's 'fifth fattest nation'

By Carla Bridglal carla.bridglal@trinidadexpress.com

Story Created: Jul 9, 2013 at 9:19 PM ECT
(Story Updated: Jul 10, 2013 at 11:47 AM ECT)

Trinidad and Tobago seems to be losing the battle of the bulge.

This country is the fifth fattest nation in the world, according to a recent report from the Food and Agriculture Organisation (FAO).

The UN-based organisation ranked countries based on average body mass index (BMI) using 2008 statistics.

Thirty per cent of Trinidad and Tobago's adult population had a BMI over 30, considered obese on the scale.

The number one country, Mexico, had 32.8 per cent of its adult population crossing the obese mark.

Earlier this year, the UK's Daily Mail newspaper had ranked T&T third, but had not listed its source.

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Shooting blanks

T&T males have fertility problem

By by Anna Ramdass
anna.ramdass@trinidadexpress.com

Story Created: Feb 17, 2013 at 10:56 PM ECT
(Story Updated: Feb 18, 2013 at 7:01 AM ECT)

A diet of foods that contain high saturated fats such as fried chicken, doubles and roti could be one of the causes for the high percentage of men in this country having no sperm.

Use of alcohol, nicotine, marijuana and also stress can be contributing factors, according to Dr Catherine Minto-Bain, clinical director at the Trinidad and Tobago IVF and Fertility Centre.



Science and the Prophet

*The man who foretold the
coming of the diabetes deluge*

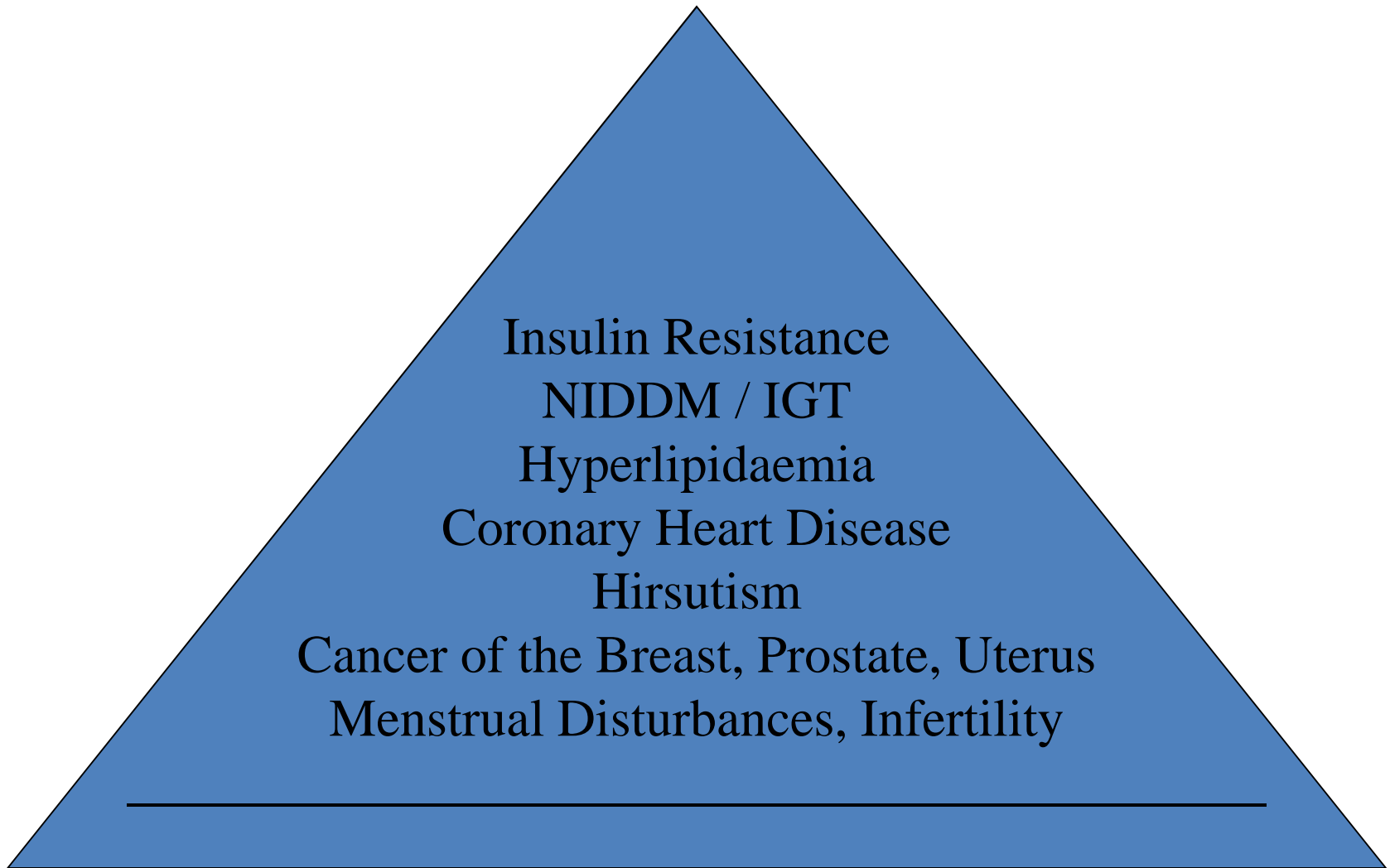
BY VANEISA BAKSH

Dr Theo Poon-King

Poon King et al, 1968

- 2% diabetic
- only half were previously known diabetics
- Rare under age twenty
- 3.5% over the age of twenty
- Females (2.1%) more than males (1.5%)
- East Indians (2.4%) vs. African ancestry (1.4%)
- Urban > Rural
- Obesity identified as predisposing factor

METABOLIC SYNDROME



OBESITY

B.C.



1800's



1920's



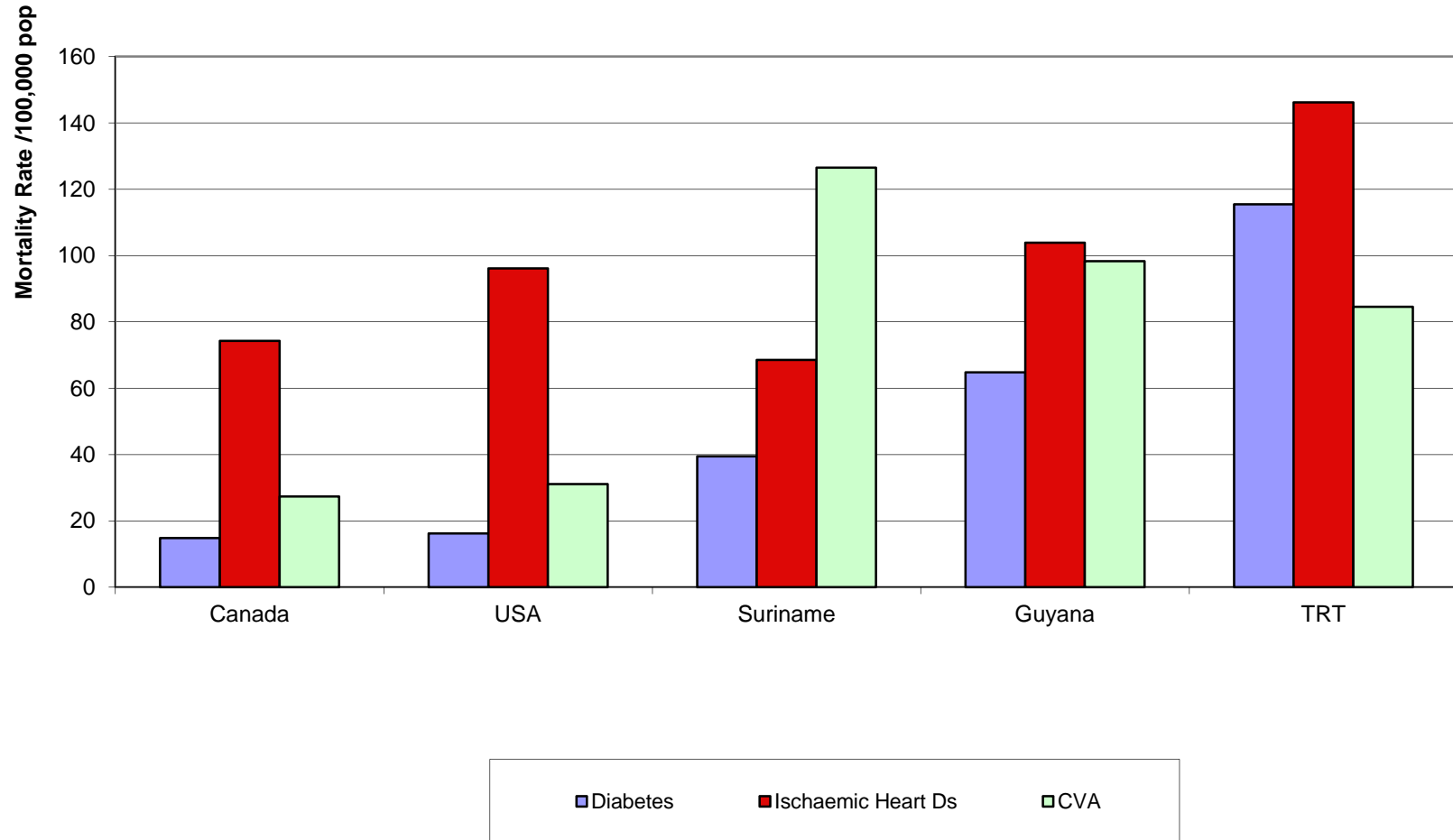
1950's



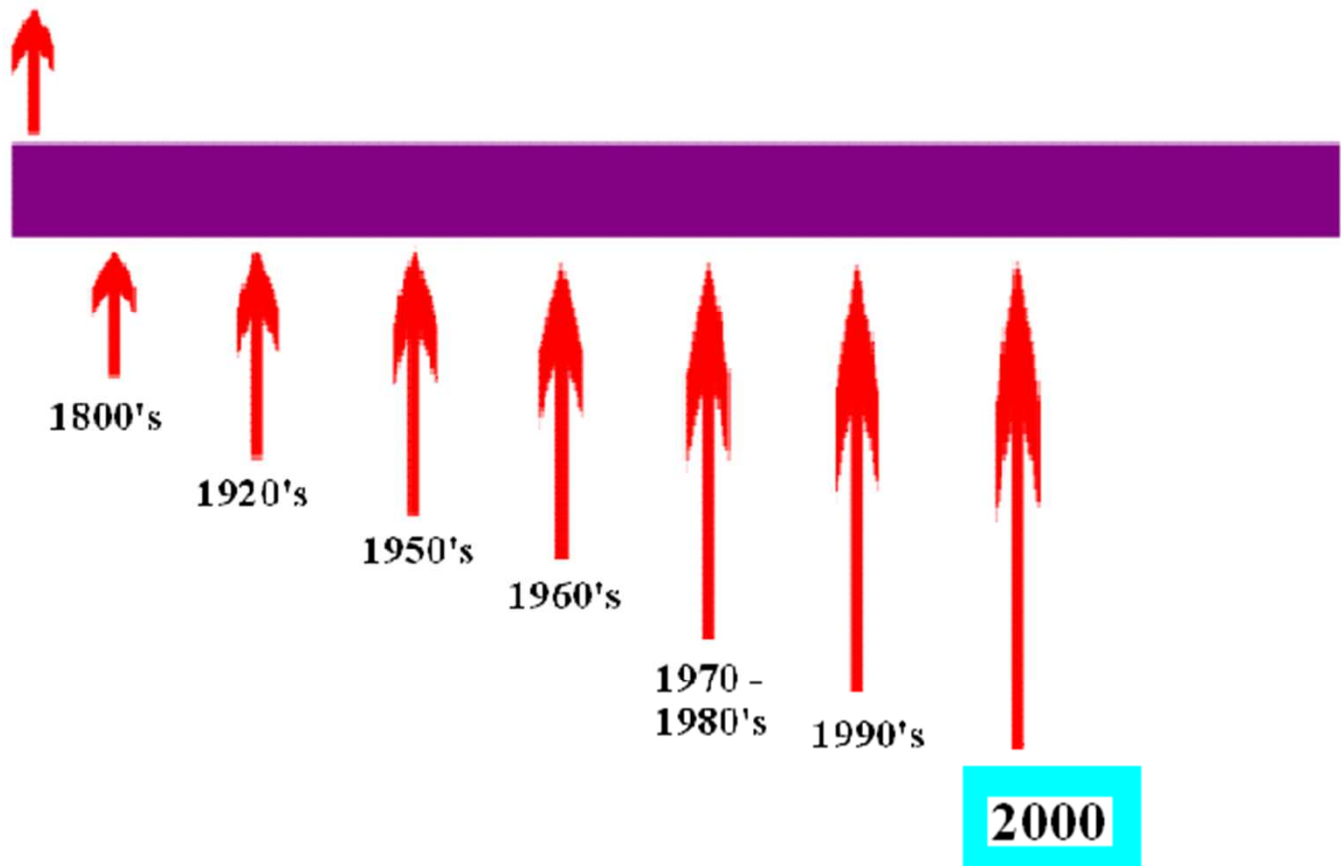
1960's

Poon King highlights the emergence of the diabetes epidemic in Trinidad.

Age Adjusted Mortality Rates, Selected Caribbean Countries vs USA and Canada (PAHO 2008)



B.C.



The emergence of the epidemic in children.

Childhood Obesity

2001: Yvonne Batson

-Sample of secondary school children, n =1512

-7% overweight

-5% obese

Gulliford et al, 2001

Batson, 2001

CHILDHOOD OBESITY

- 2010: Batson
- Primary and Secondary schools
- Sample of more than 2000

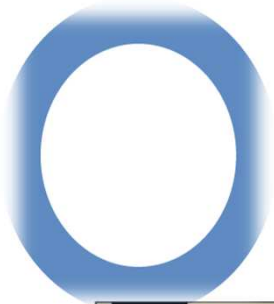
Childhood Obesity in Trinidadian schoolchildren

	2001	2011
Overweight	7%	17%
Obese	5%	15%

Batson et al., 2001 & 2011

BMI For Age. Batson 2011

	Total	Children	Adolescents
Severe Thinness	16 (0.8%)	1(0.1%)	15(1.1%)
Thinness	70 (3.3%)	22(3.0%)	48(3.4%)
Healthy Weight	1314 (61.7%)	383(52.2%)	931(66.7%)
Overweight	365(17.1%)	147(20.0%)	218(15.6%)
Obese	322(15.1%)	168(22.9%)	154(11.0%)
Unknown	43 (2.0%)	13(1.8%)	30(2.2%)



Acanthosis Nigricians

FIGURE 1
Acanthosis nigricans



Grade 1



Grade 2



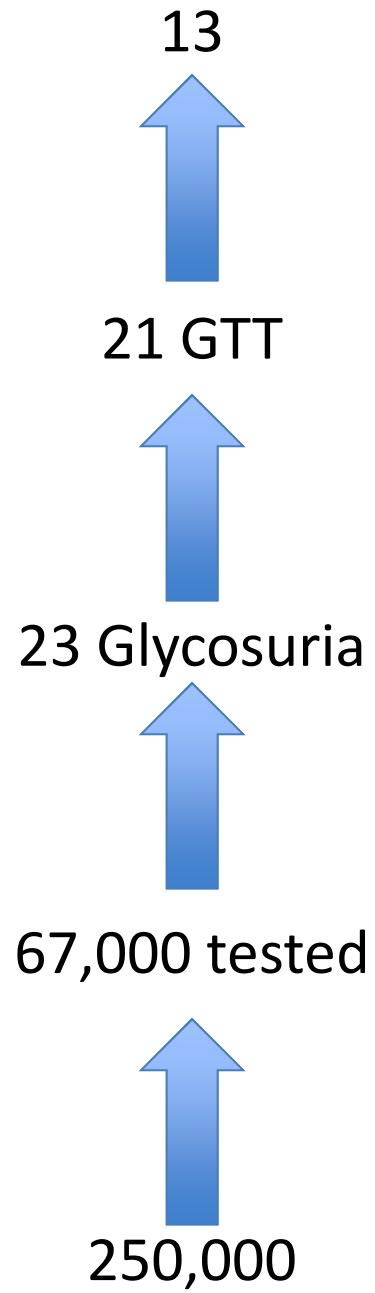
Grade 3



Grade 4

Photos courtesy of Driscoll Children's Hospital

Grade	%
0	55.5
1	25.2
2	11.6
3	5.0
4	1.8



Primary School – 80%
Secondary School – 50%



13



3



1





Ministry of Health
Government of Trinidad and Tobago

PANAMERICAN STEPS CHRONIC NON-COMMUNICABLE DISEASE RISK FACTOR SURVEY

FINAL REPORT



STEPS 2012

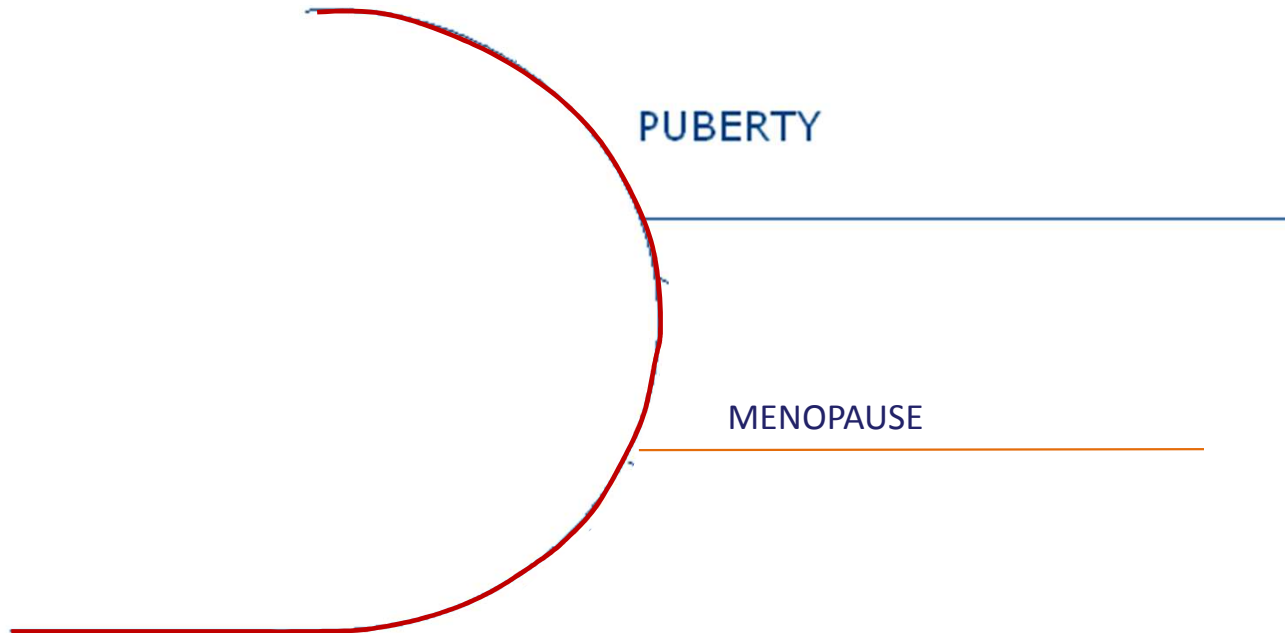
- OBESITY AMONG FEMALES (15-64 YEARS)
 - 69% have a BMI >25
 - 40% have a BMI >30

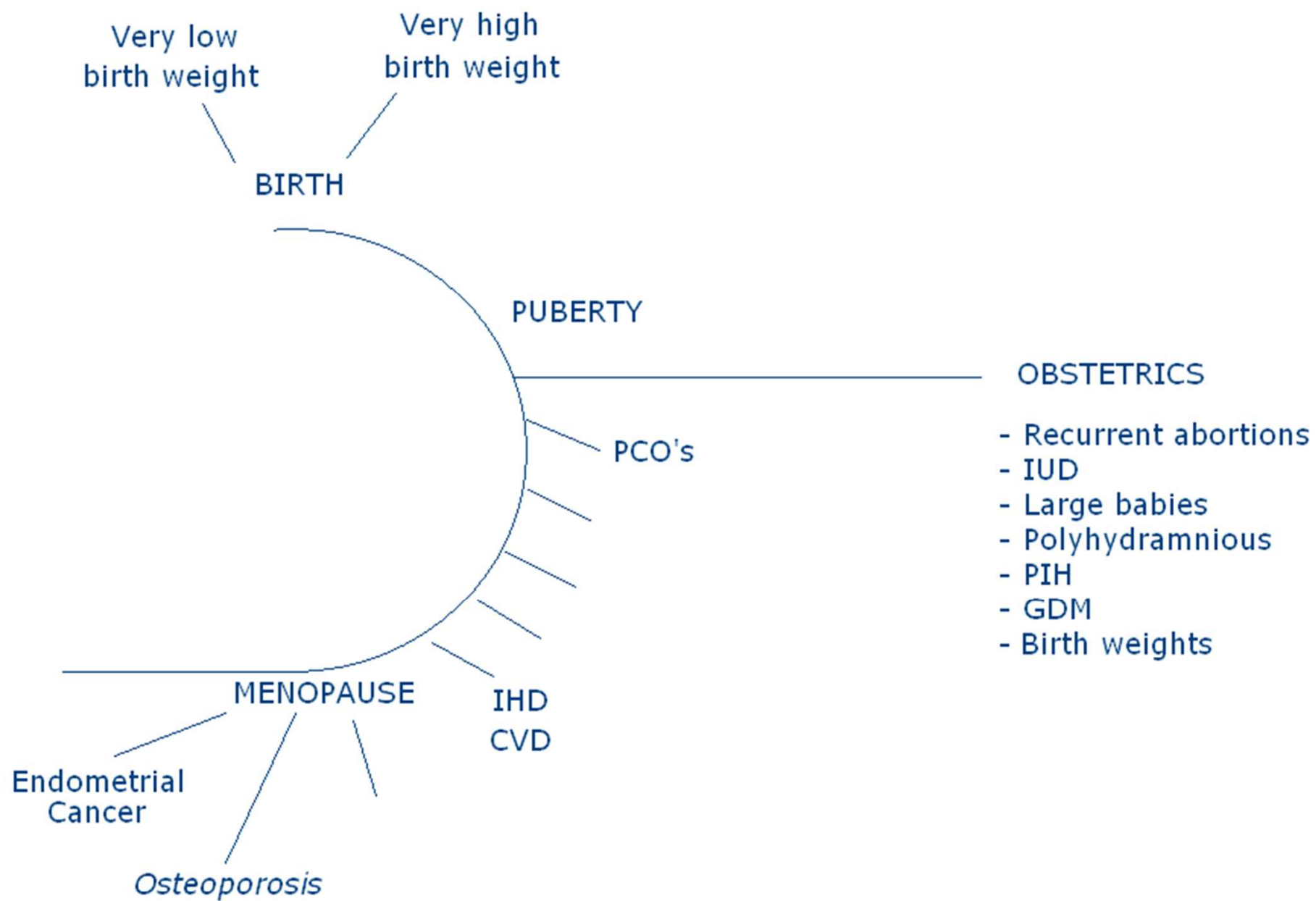
BIRTH

PUBERTY

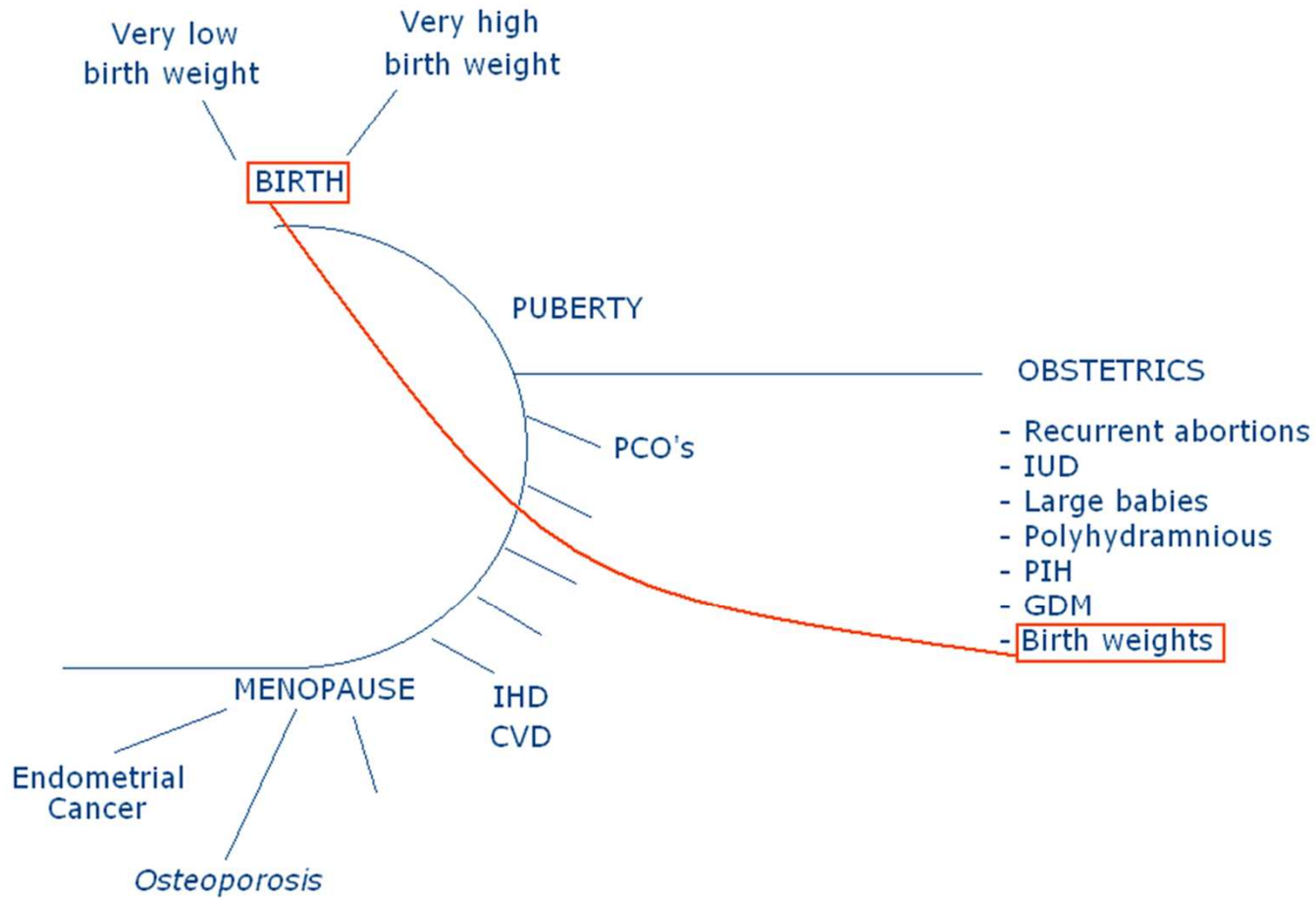
MENOPAUSE

Undernutrition





Br J Diabetes and Vasc Disease, 2009



STEPS 2012

- PREVALENCE OF DIABETES AMONG WOMEN IN TRINIDAD AND TOBAGO
 - 22% among those 15-18 years old
 - 19% among those 19-24 years old

- Diabetic pregnancy carries the following risks:
- X 2-fold increased risk of caesarean section
- X3-fold increased risk of trauma
- X4-fold increased risk of admission to neonatal ICU
- X8-fold increased risk of fetal abnormalities



ADA 2011

Standards of Medical Care in Diabetes—2011

Table 6

Screening for and diagnosis of GDM

Perform a 75-g OGTT, with plasma glucose measurement fasting and at 1 and 2 h, at 24–28 weeks of gestation in women not previously diagnosed with overt diabetes.

The OGTT should be performed in the morning after an overnight fast of at least 8 h.

The diagnosis of GDM is made when any of the following plasma glucose values are exceeded:

- Fasting ≥ 92 mg/dl (5.1 mmol/l)
- 1 h ≥ 180 mg/dl (10.0 mmol/l)
- 2 h ≥ 153 mg/dl (8.5 mmol/l)

Management of GDM makes a difference!

- Crowther et al 2005
- Landon et al 2009
- Treatment reduces likelihood of serious neonatal and maternal morbidities

Existing Model in India

Gestational diabetes mellitus: Advocating for policy change in India

[Anand Madhab](#) , [Vishwa Mohan Prasad](#), [Anil Kapur](#)

Abstract

Abstract + References

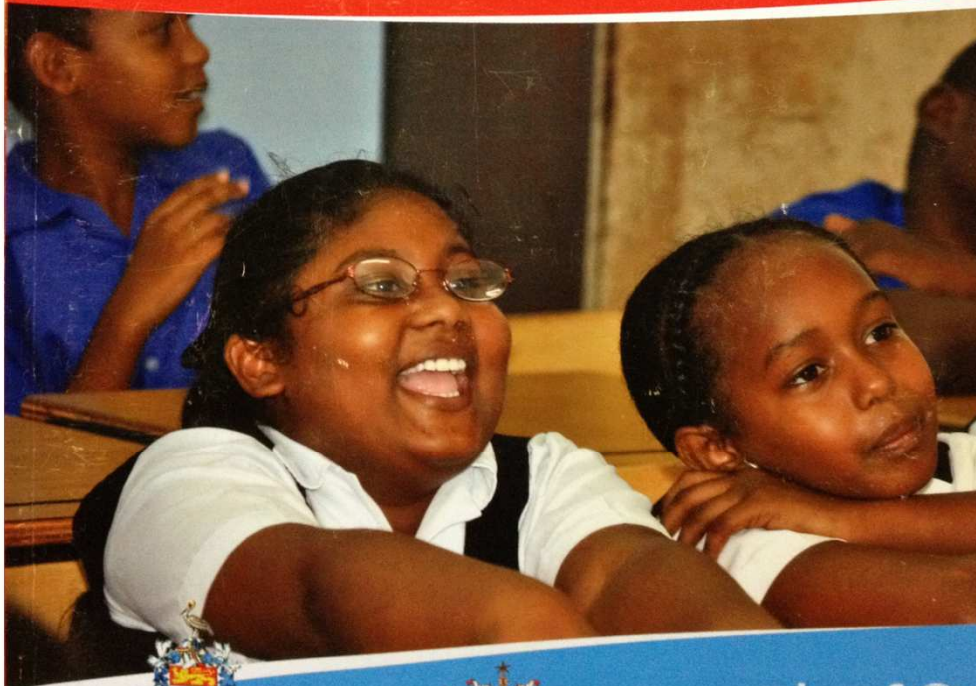
PDF

References

Abstract

A multimedia awareness and advocacy campaign for mainstreaming gestational diabetes mellitus (GDM) in the public health domain is described. The multimedia campaign has created awareness about the relevance of GDM to women's health and the health of future generations through direct contact, reaching out to over half a million people in 7 districts of 4 states in northern India. Using mass media, over 3.7 million people have received information on GDM. Through multistakeholder forums, more than 1000 key stakeholders have been encouraged to mainstream GDM into the existing health delivery system. The Indian Ministry of Health has introduced free screening for GDM among the 5 services offered to pregnant women below the poverty line in the National Rural Health Mission (NRHM) program. In addition, several state governments, such as in Bihar, Delhi, Jharkhand, and Punjab, have pledged similar initiatives addressing GDM; the Government of Tamil Nadu is already implementing such a policy. Policy development is a complex process that requires action on many fronts. By showcasing evidence, raising awareness, creating public opinion through dialogue and discussion, media can help build a positive environment and momentum for effective policy creation as well as service utilization.

Situation Analysis of Children and Women in Trinidad & Tobago

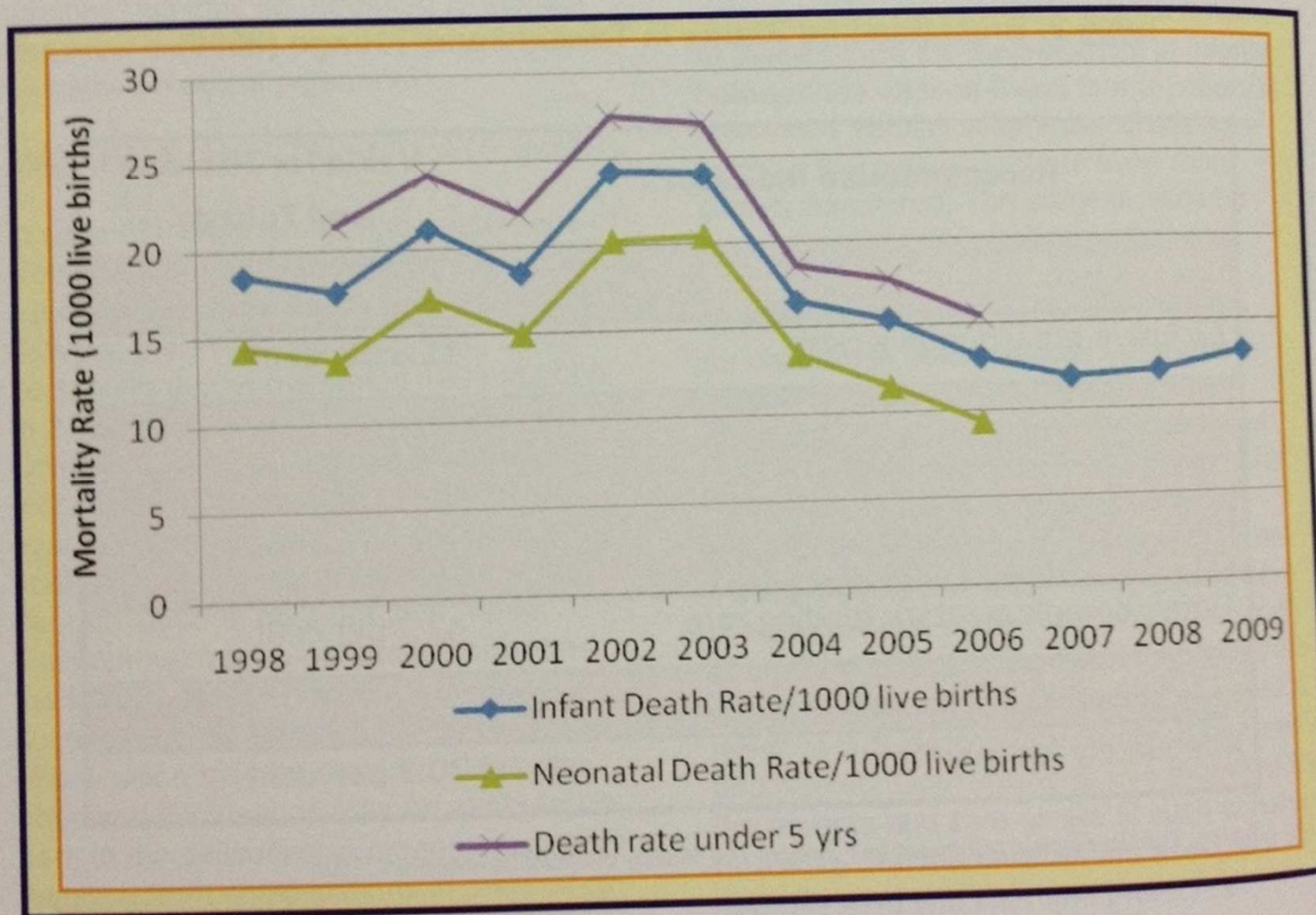


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Figure 2: The Infant Mortality Rate, Neonatal Mortality Rate and Under-Five Mortality Rate for Trinidad and Tobago (1998-2009)⁵



Source: Central Statistical Office (CSO) and the Ministry of Health Annual Statistical Reports (various years).

⁵ Data from 2007 to 2009 were only available for Infant Deaths

RESEARCH

Throughout the report, reference was made to the lack of adequate data to properly analyse particular situations. In Trinidad and Tobago, at this time, there is need for a meaningful research effort looking for causes of some of the problems – why is infant mortality so high in spite of the commendable skill level of the health personnel involved? Why do so many children run away from home? It is now necessary to

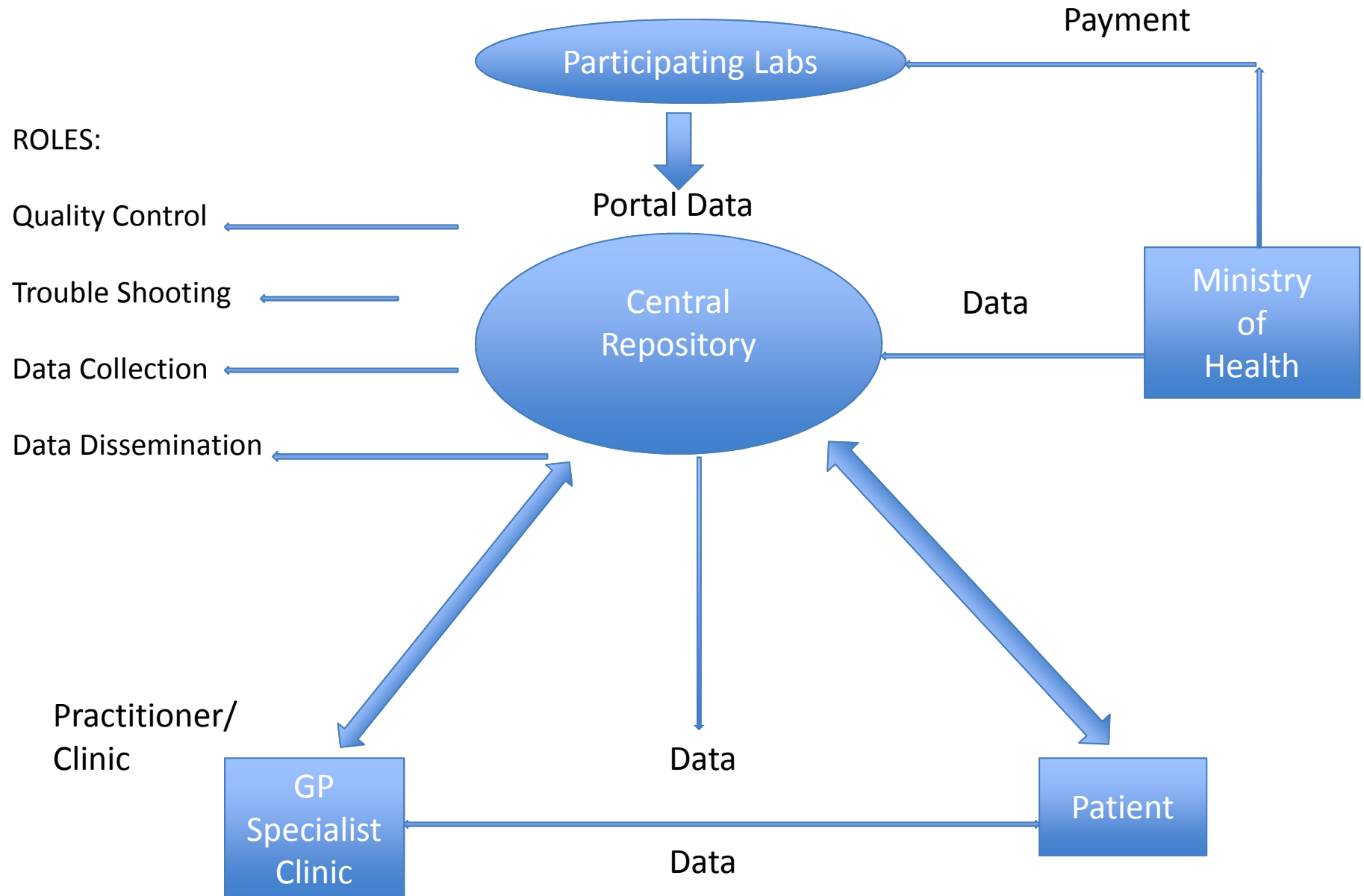
TnT Population

- Population of 1,300,000
- 100,000 with T2DM
- 200,000 with Prediabetes

SCALE OF PROBLEM

- 20,000 pregnancies per annum
- 1,000 enter pregnancy with diabetes (BUT half unaware of this!)
- 3,000 develop GDM
- COMMONEST MEDICAL CONDITION COMPLICATING PREGNANCY
- NO STANDARD APPROACH (at best, ad hoc)

THE NETWORK



OUTCOMES

Fulfil mandate #5 of Declaration of POS

- QUALITY
- UNIVERSAL ACCESS
- MULTISECTORAL
- COMPREHENSIVE SCREENING

COST EFFECTIVENESS

- Start-up cost 12 million
- Running costs 6 million per annum
- Compares with the losses of mothers and children
- Compares favourably with other social services e.g. ferry to Tobago OR Retrieving a fire truck!

FULFILLING MILLENNIUM DEVELOPMENT GOALS



Goal 1: Eradicate Extreme Hunger and Poverty



Goal 2: Achieve Universal Primary Education



Goal 3: Promote Gender Equality and Empower Women



Goal 4: Reduce Child Mortality



Goal 5: Improve Maternal Health



Goal 6: Combat HIV/AIDS, Malaria and other diseases



Goal 7: Ensure Environmental Sustainability



Goal 8: Develop a Global Partnership for Development



<h1>Roll Out</h1>	
<h1>Research</h1>	<ul style="list-style-type: none">• Resources• Right Way
<h1>Response</h1>	
<h1>Recognise</h1>	

Acknowledgements

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