Big Data in Public Health

David L. Mowat

MBChB, MPH, FRCPC, FFPH

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Region of Peel
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Example 1: Low Birth Weight

Low Birth Weight, Pre-Term and Small-for-gestational-age Rate, Peel and Ontario, 2002-2006 Combined

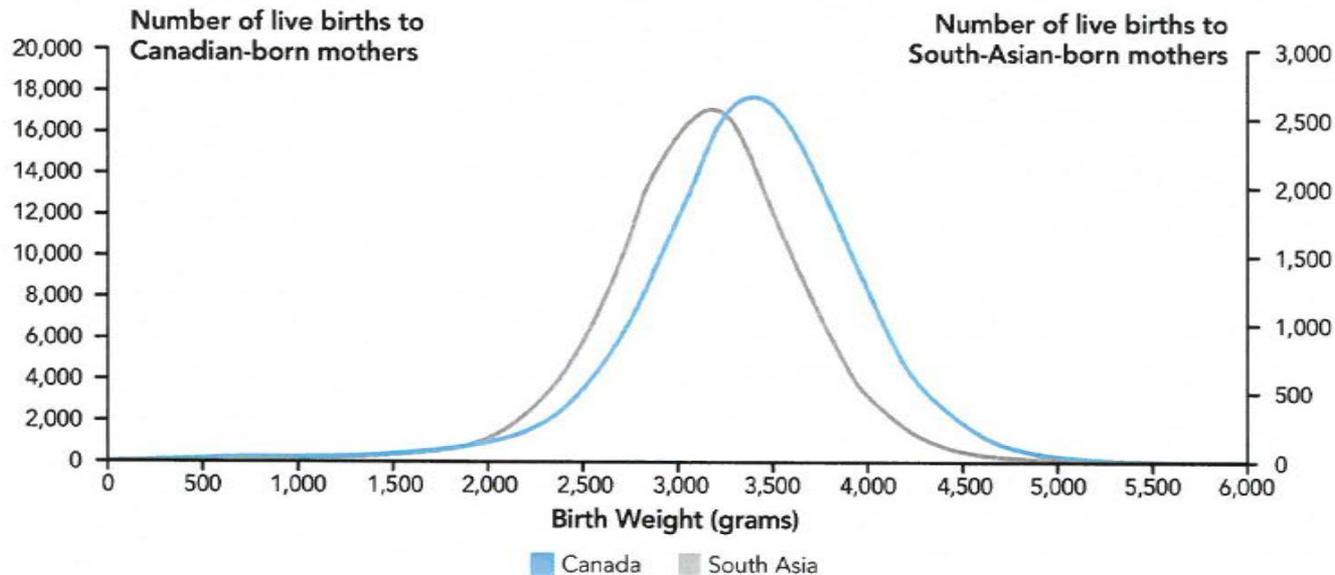|	Peel	Ontario
Low birth weight rate[†]	6.9	6.0
Pre-Term birth rate[†]	7.5	7.5
Small-for-gestational-age rate[†]	10.8	8.7

† rate per 100 live births
Source: Ontario Live Birth Database 2002-2006, IntelliHEALTH Ontario, Ministry of Health and Long-Term Care

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Birth Weight by Maternal Region of Birth, Ontario

Figure 6.5

Birth Weight by Maternal Region of Birth (Canada and South Asia only), Ontario, 2002 – 2006 Combined

Number of live births to Canadian-born mothers

Number of live births to South-Asian-born mothers

Birth Weight (grams)

Canada   South Asia

Note: Data have been smoothed
Source: Ontario's Live Birth Database 2002–2006, IntelliHEALTH Ontario, Ministry of Health and Long-Term Care

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Example 2: Remaining Life Expectancy at Age 25, by Low Income Census Tract Quintiles, Peel, 2005
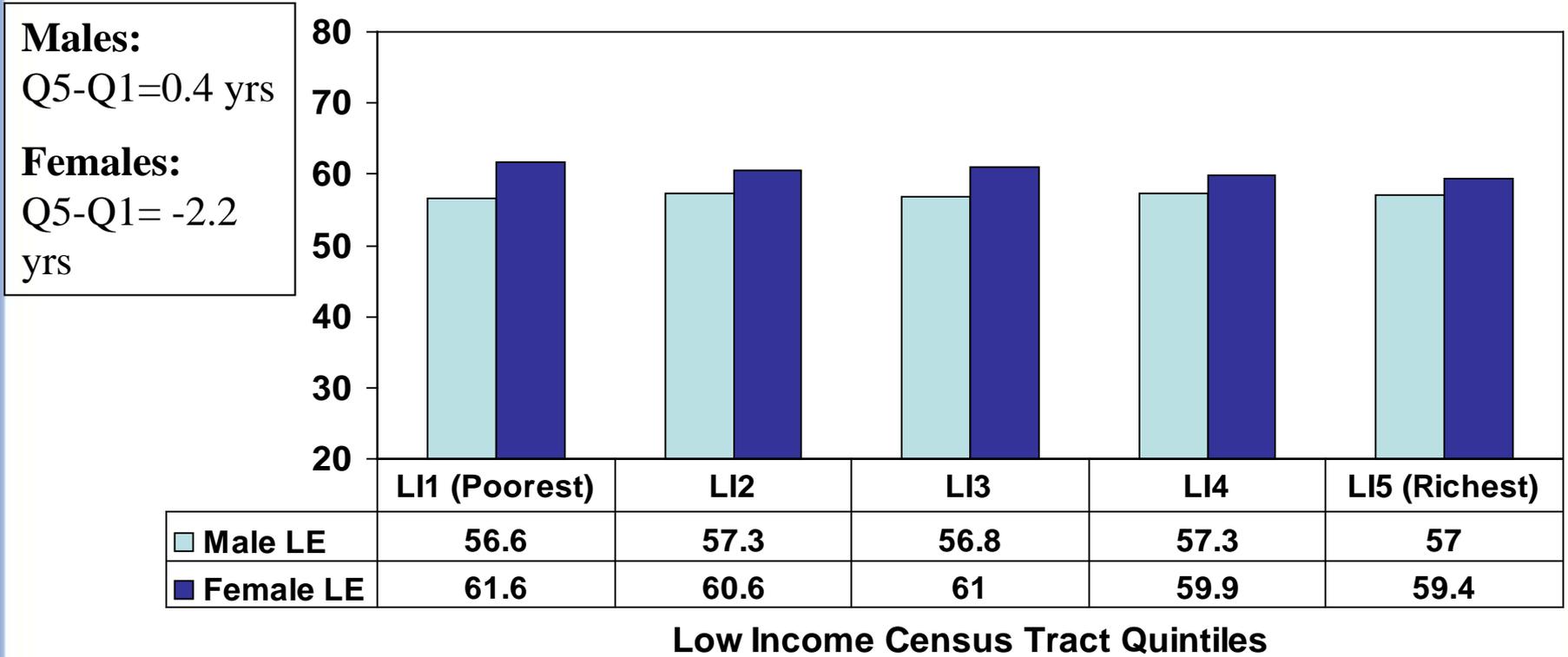
Males:
Q5-Q1=0.4 yrs

Females:
Q5-Q1= -2.2 yrs

	LI1 (Poorest)	LI2	LI3	LI4	LI5 (Richest)
☐ Male LE	56.6	57.3	56.8	57.3	57
■ Female LE	61.6	60.6	61	59.9	59.4

Low Income Census Tract Quintiles

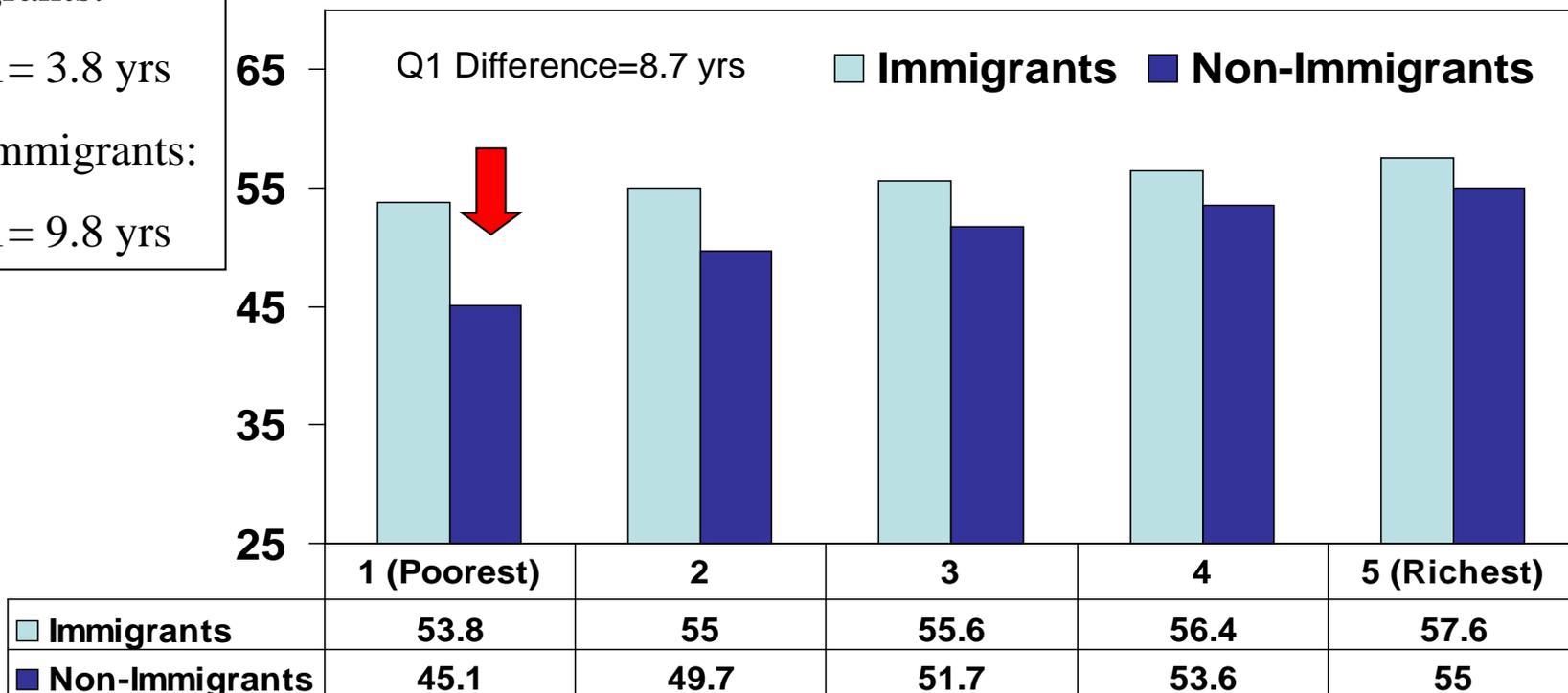☐ Male LE ■ Female LE

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Remaining life expectancy at age 25 by immigrant status and income adequacy quintile, Men, City of Toronto and Peel, 1991-2001

Immigrants:
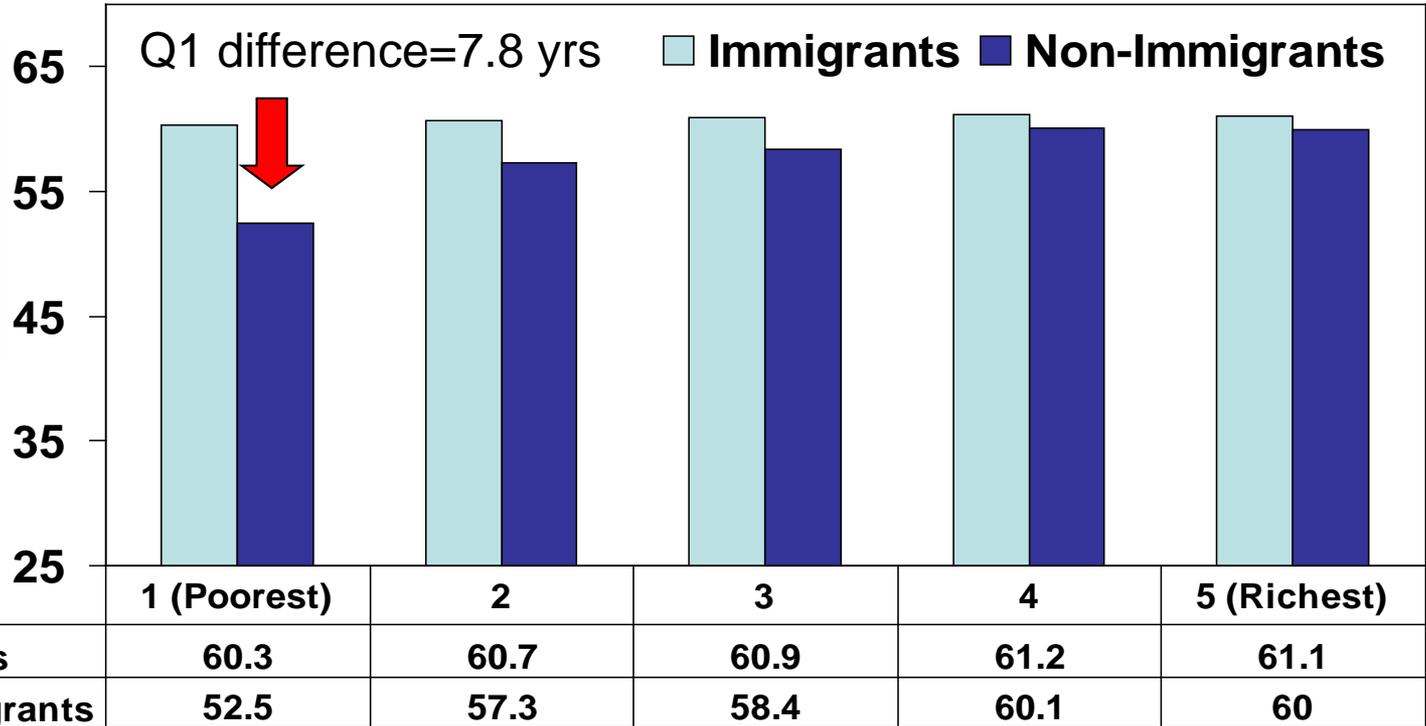
Q5-Q1= 3.8 yrs

Non-immigrants:

Q5-Q1= 9.8 yrs

Q1 Difference=8.7 yrs   □ **Immigrants** ■ **Non-Immigrants**

	1 (Poorest)	2	3	4	5 (Richest)
□ **Immigrants**	53.8	55	55.6	56.4	57.6
■ **Non-Immigrants**	45.1	49.7	51.7	53.6	55

Income adequacy quintile

Note: Q5-Q1 difference for immigrants=3.9 years; Q5-Q1difference for non-immigrants=9.8 years
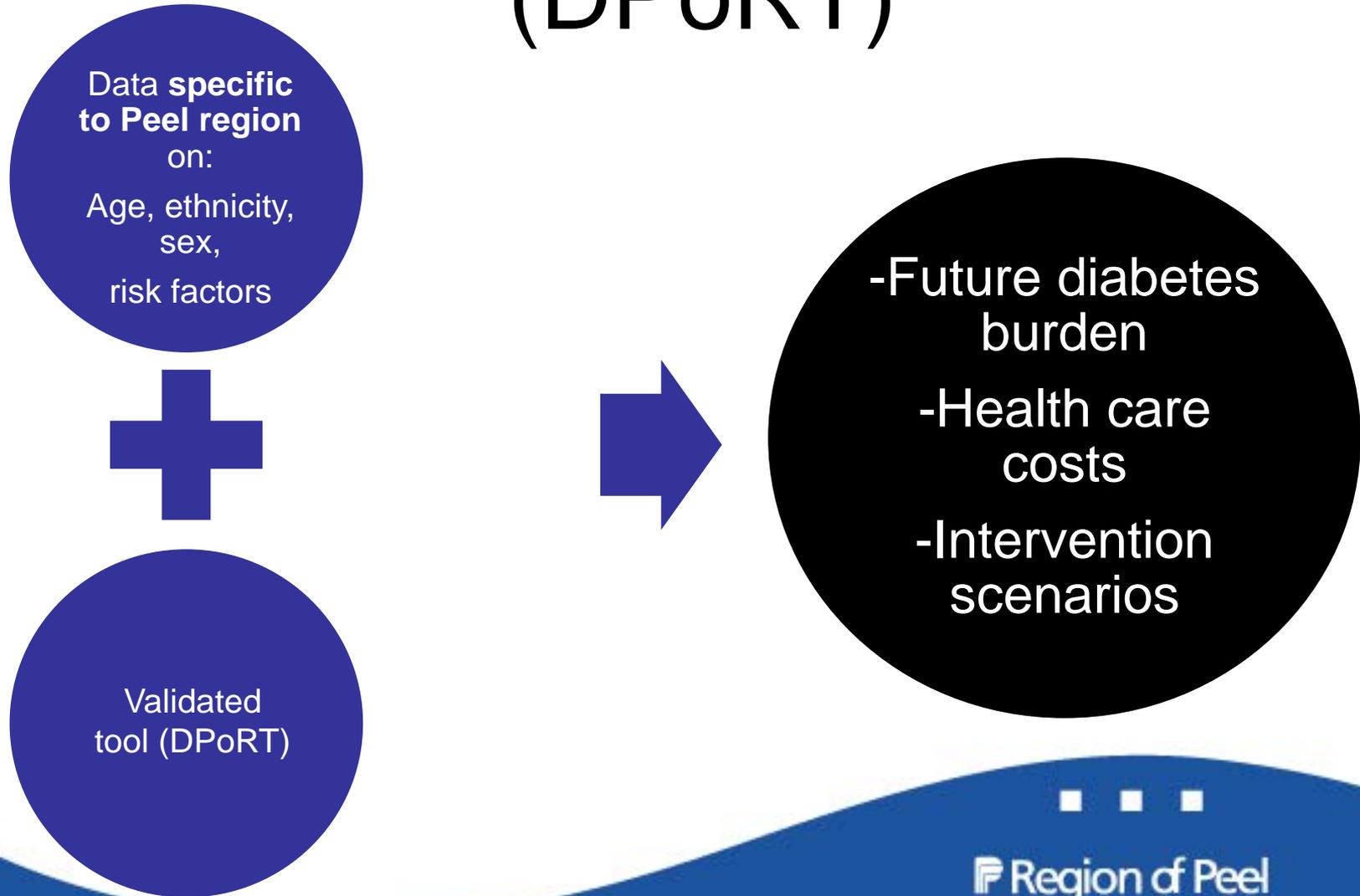
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Remaining life expectancy at age 25 by immigrant status and income adequacy quintile, Women, City of Toronto and Peel, 1991-2001

Immigrants:
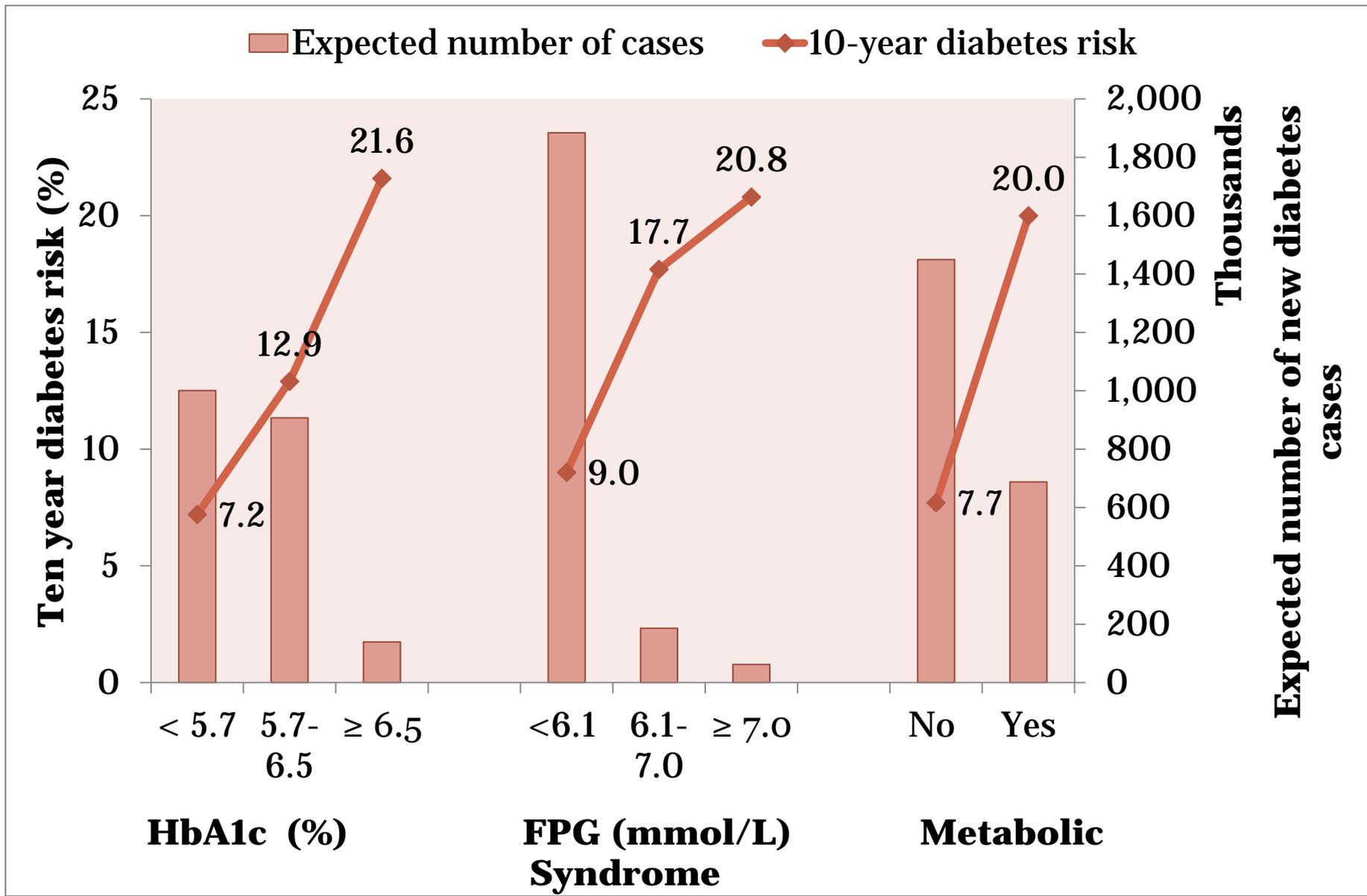Q5-Q1=0.8 yrs

Non-immigrants
Q5-Q1=7.4 yrs

Q1 difference=7.8 yrs   ☐ **Immigrants**   ☐ **Non-Immigrants**

	1 (Poorest)	2	3	4	5 (Richest)
☐ Immigrants	60.3	60.7	60.9	61.2	61.1
☐ Non-Immigrants	52.5	57.3	58.4	60.1	60

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Diabetes Population Risk Tool (DPoRT)

Data **specific to Peel region** on:

Age, ethnicity, sex,

risk factors

Validated tool (DPoRT)

-Future diabetes burden

-Health care costs

-Intervention scenarios

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CCHS Data for DPoRT

- BMI
- Age
- Non-white ethnicity
- Hypertension

- Smoking (M)
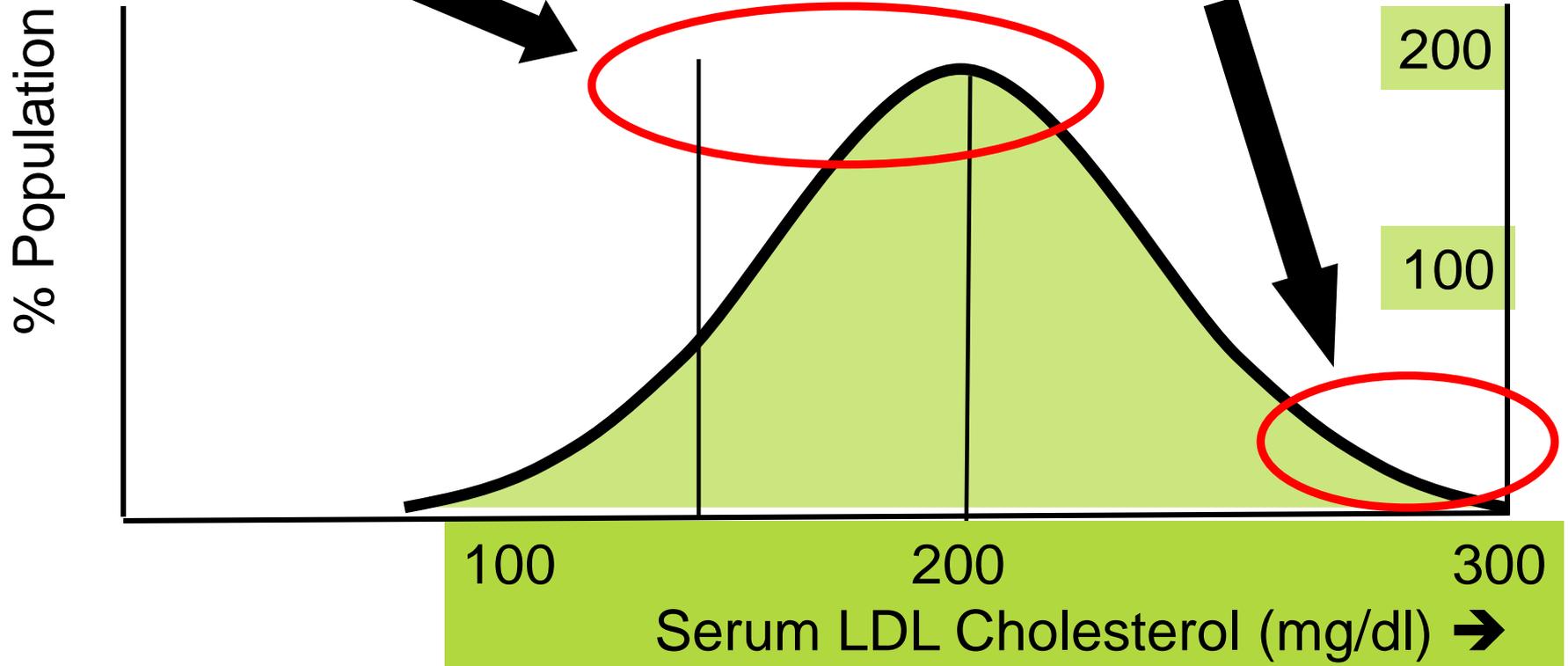- Heart Disease (M)
- Immigrant (F)
- Post-secondary education

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Rosella L.C., et al. Implications of Clinical Targets for Diabetes Prevention. Annals of Epidemiology 2013; 23(9):587-588.

Sick Individuals and Sick Populations: Sir Geoffrey Rose

The PAF of Walkability for Diabetes

- ## The overall PAF is **16.2%**

Men		Women	
Recent Immigrant **19.9**	Long-term Resident **16.1**	Recent Immigrant **24.8**	Long-term Resident **13.7**
Overall **16.2**			

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Some Lessons

- large-scale sample survey data
    - limitations imposed by sample size
    - definitional issues
    - continuity
- administrative databases
    - definitional issues
    - linking elements
- quality
- public health-academic partnerships