

Ottawa Hospital Research Institute

OHRI



IRHO

Institut de recherche de l'Hôpital d'Ottawa

Prevalence and Predictors of Adverse Obstetrical Outcomes in Women with HIV: A twenty-year single-center review

Presented by: Sarah Buchan, MSc

November 12, 2012

Co-authors: Johanna Spaans, Elham Sabri, Louise Balfour, Dominique Massenat, Tinghua Zhang, Andree Gruslin, Mark Walker & Bill Cameron

AN INSTITUTE OF • UN INSTITUT DE



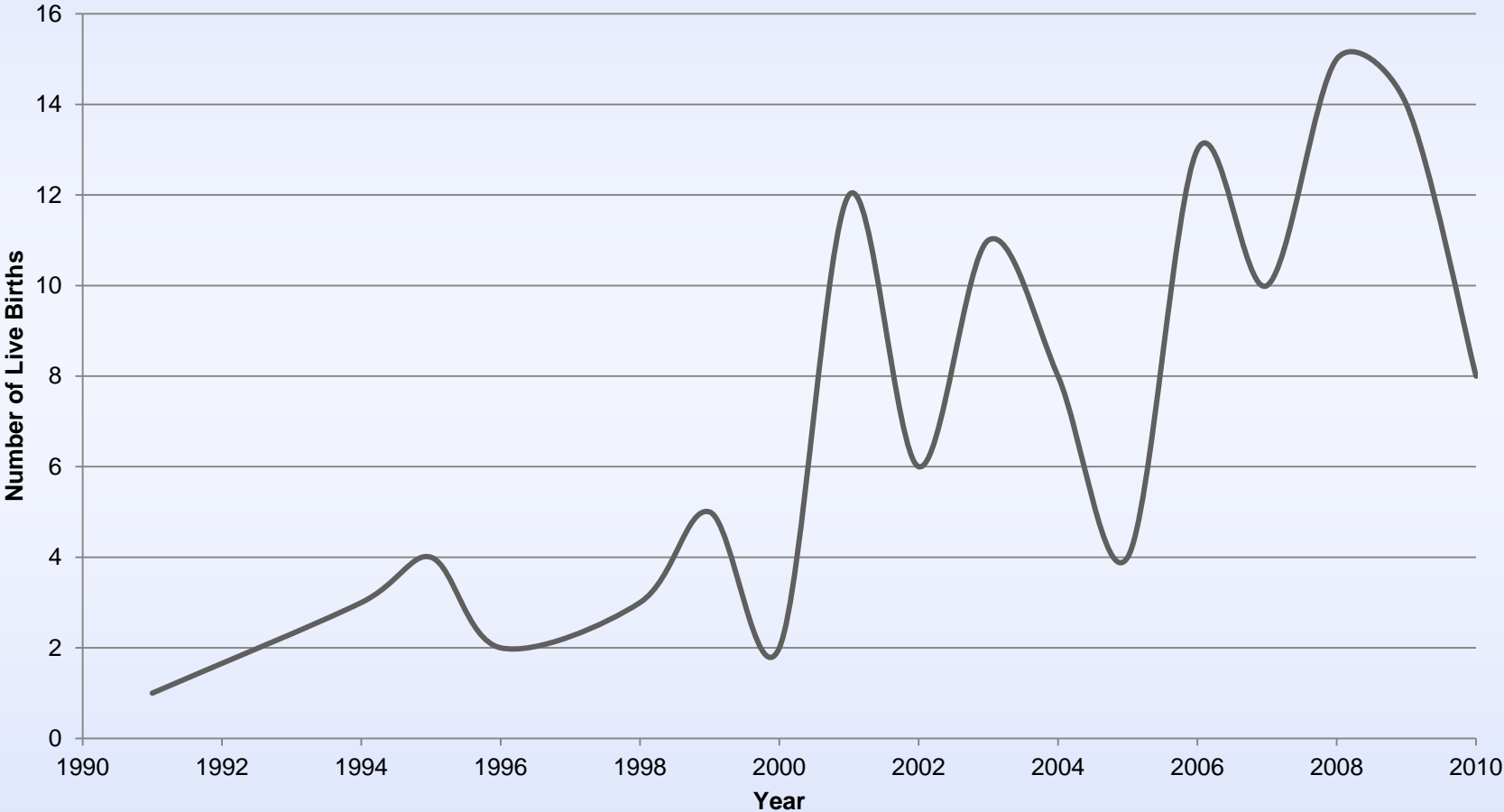
Background

- Globally, in 2009, almost 50% of new infections occurred in people < 25 years of age, the majority of them women
- HIV is recognized as a risk factor for adverse obstetrical outcomes (AOO)
 - HIV immune disease and treatment are also potential risks
- Social determinants of health (SDOH) have been widely cited as risk factors for AOO
 - More common issues among women with HIV

The Ottawa Hospital

- Provides comprehensive care and medical and allied health services to patients with HIV
- The fastest growing demographic:
 - Child-bearing aged female migrants from countries where HIV is endemic (>2% population prevalence)

Live Births per year, 1990-2010

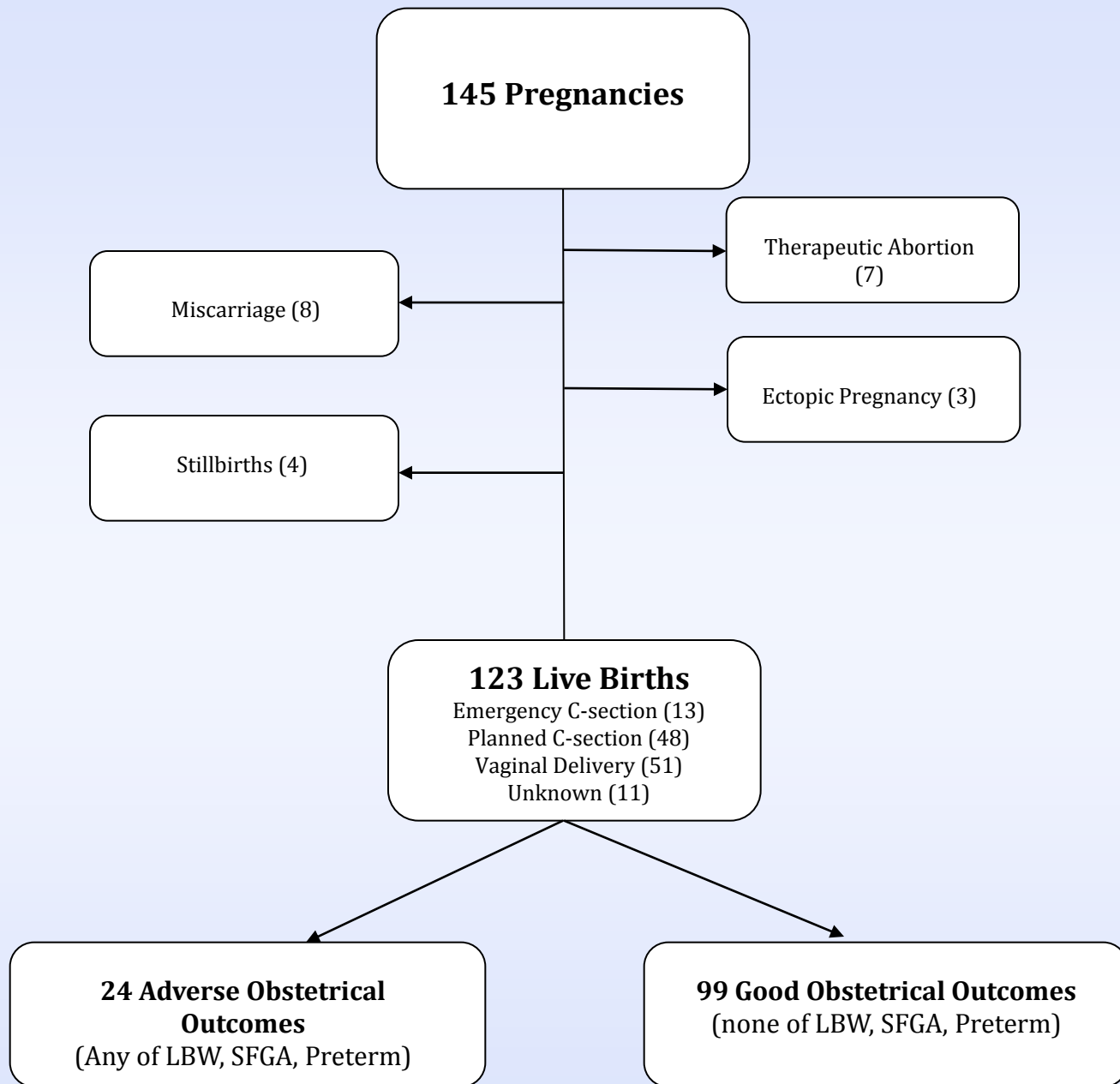


Objective

- To determine the prevalence of AOO in live births in women with HIV in Ottawa over 20 years
- To identify risk factors associated with AOO

Methodology

- Retrospective cohort study, 1990-2010
- Study approved by The Ottawa Hospital REB
- Adverse obstetrical outcomes investigated:
 - Low birth weight (<2500g)
 - Preterm delivery (<37 weeks)
 - Small for gestational age (birth weight <10th percentile)
- Data were collected on:
 - Demographic and individual characteristics
 - HIV-treatment characteristics
 - Medical history
 - Sociodemographic and socioeconomic characteristics
- Univariate logistic regression was used to identify factors associated with AOO



Adverse Obstetrical Outcomes

AOO	Number
Pre-term Delivery	17
Small for Gestational Age	11
Low Birth Weight	9
Stillbirths*	4
TOTAL**	28

* Not included in analysis of co-variates

** 9 deliveries resulted in more than one AOO

Composite Outcomes* (n=24)

Risk Factor	OR Estimate	Lower 95% CL	Upper 95% CL	P-value
No live-in partner	4.00	1.39	12.5	0.011
Psychiatric history	5.13	1.68	15.7	0.004
Hepatitis C	7.63	1.68	34.7	0.009
More years in Canada since immigration (ACB)	1.21	1.05	1.39	0.01
IVDU	8.09	0.70	93.3	0.09
No ART	1.82	0.31	10.0	0.51
R _x ERA	2.38	0.75	7.69	0.14
CD4 (<200 vs. >500)	2.17	0.53	8.81	0.28
Plasma viremia unsuppressed	2.13	0.79	5.88	0.13

* Any of LBW, SFGA, PTD

Interpretation

- AOO are higher than expected compared with the general population
- Pregnancy wastage is higher than expected
- Social and contextual, but not medical factors correlated AOO
- There is a knowledge gap on the relative importance of specific factors in the social and economic domain on obstetrical outcomes in women with HIV
 - SDOH adversely affect birth outcomes
 - SDOH are over-represented in women with HIV

No live-in partner

- Association may also be confounded by maternal stress which has been linked with AOO, particularly with preterm delivery
 - Interventions to address the stigma and social isolation experienced by these mothers may reduce stress and improve obstetrical outcomes

Immigrant, years in Canada

- Culture and acculturation may impact the outcome of pregnancy, such as in the pursuit and continuance of antenatal care
- Reluctance to access HIV-related care influenced by stigma of HIV infection, particularly in ACB communities
 - Fertility desires and types of health services provided will be an important consideration in ensuring healthy outcomes for women and their children

Significance

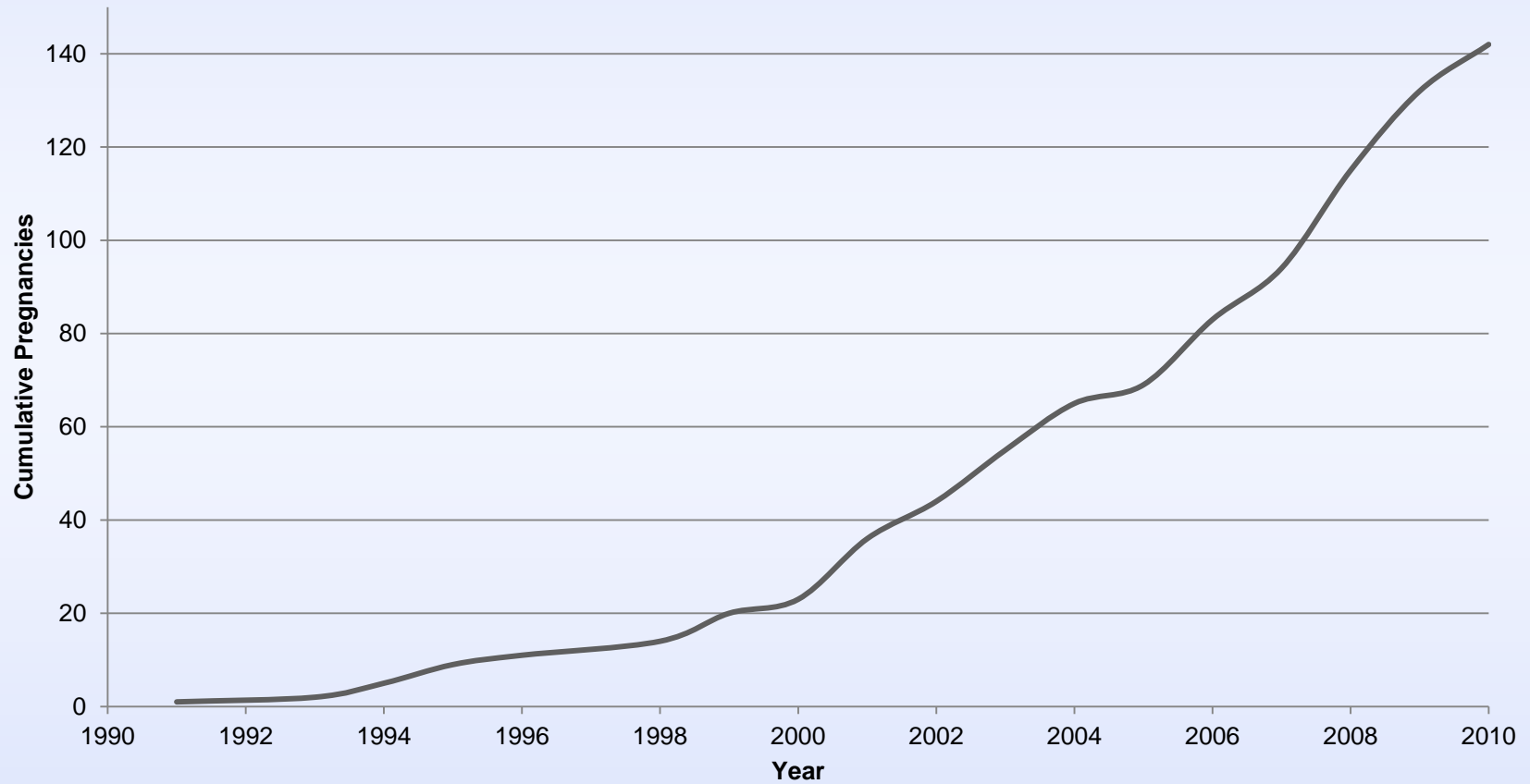
- Link between HIV and AOO would be well informed by a better understanding of factors in the social domain
 - May provide the impetus for specific interventions to support better reproductive health outcomes among women living with HIV infection
- Understanding the unique characteristics of female migrants of endemic countries is important
 - Population at risk perspective
 - Impact on the obstetrical outcomes of women infected with HIV
- Intervention on Maternal & Child Health with respect to AOO is likely best positioned in the social domain

Acknowledgments

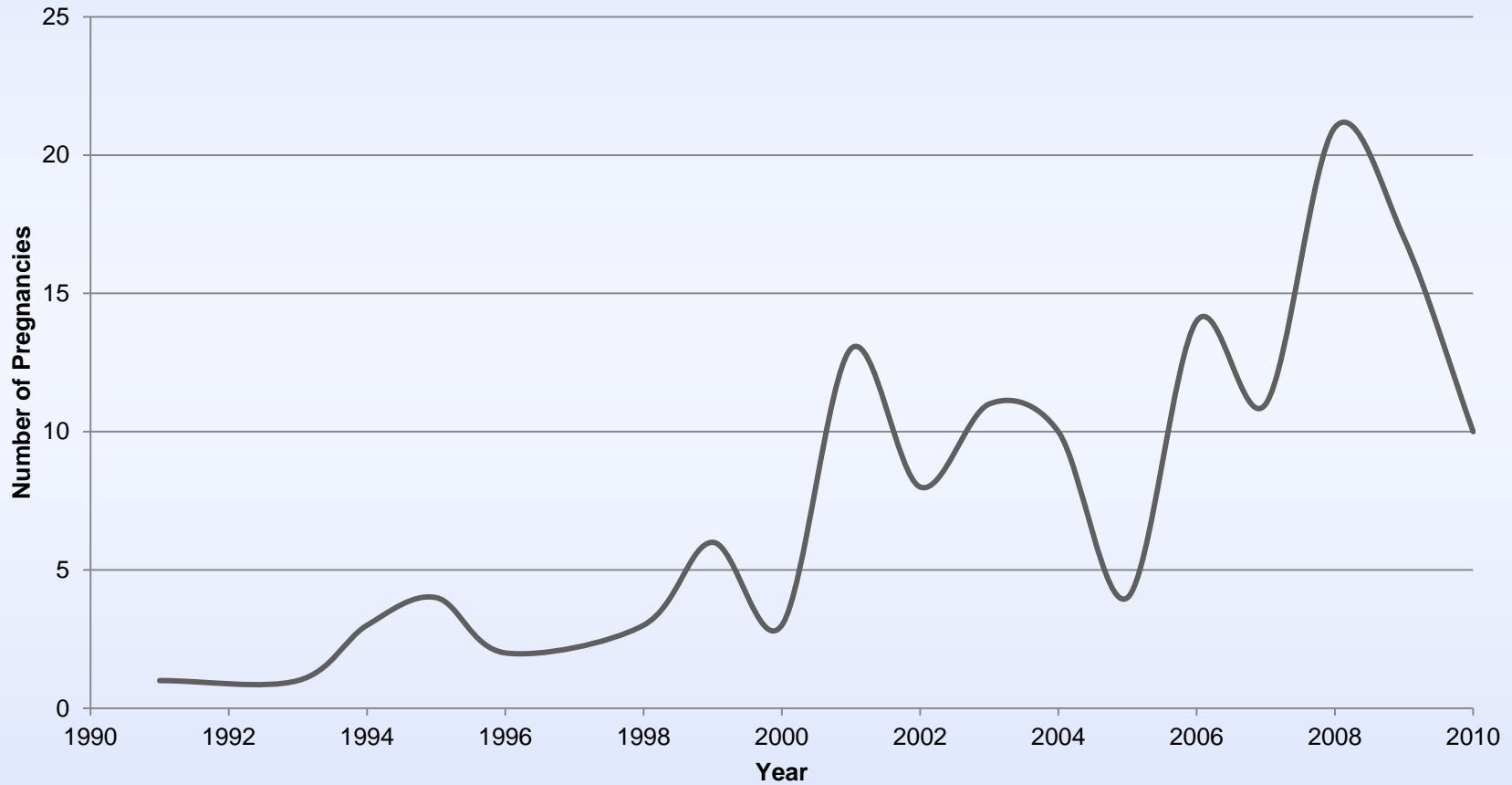
- **Dr. Bill Cameron**
 - The Ottawa Hospital, Division of Infectious Diseases
- **Drs. Mark Walker, Louise Balfour & Andree Gruslin**
 - The Ottawa Hospital, Division of Obstetrics and Gynecology
- **Johanna Spaans, Elham Sabri & Tinghua Zhang**
 - OHRI
- **Dr. Dominique Ellen Massenat**
 - Department of Medicine

Questions?

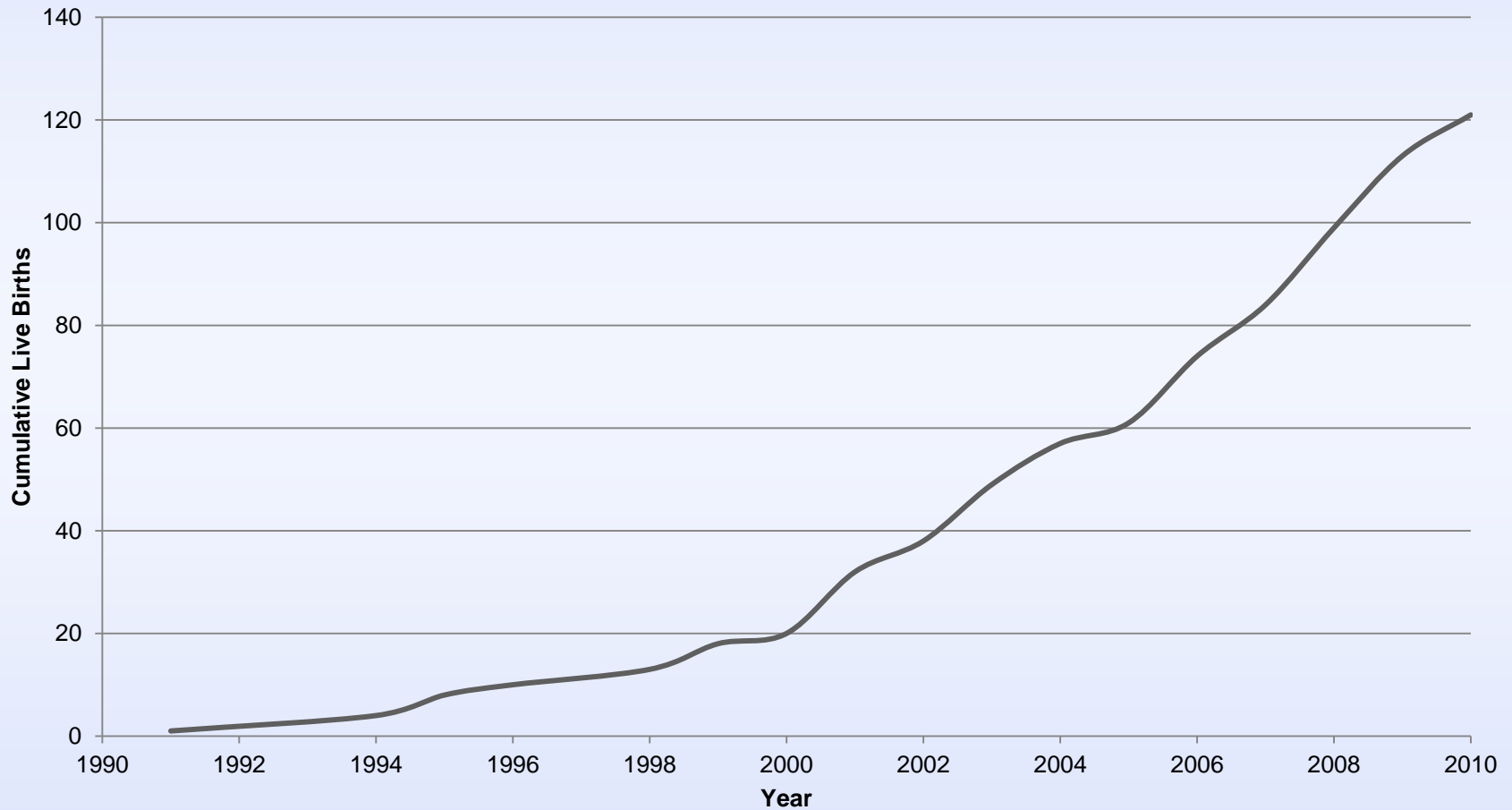
Cumulative Pregnancies, 1990-2010



Pregnancies per year, 1990-2010



Cumulative Live Births, 1990-2010



Pre-term delivery (n=17)

Risk Factor	OR Estimate	P-value
No live-in partner	4.58	0.021
Psychiatric history	10.0	0.0002
Hepatitis C	7.23	0.0099
Had lived more years in Canada since immigration	1.27	0.005

Low Birth Weight (n=9)

Risk Factor	OR Estimate	P-value
No prior pregnancies	7.54	0.0148
ART ERA <2001	4.87	0.032

Small for Gestational Age (n=11)

Risk Factor	OR Estimate	P-value
ART ERA <2001	6.64	0.0077