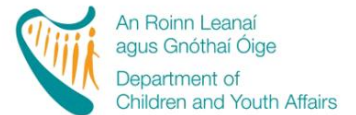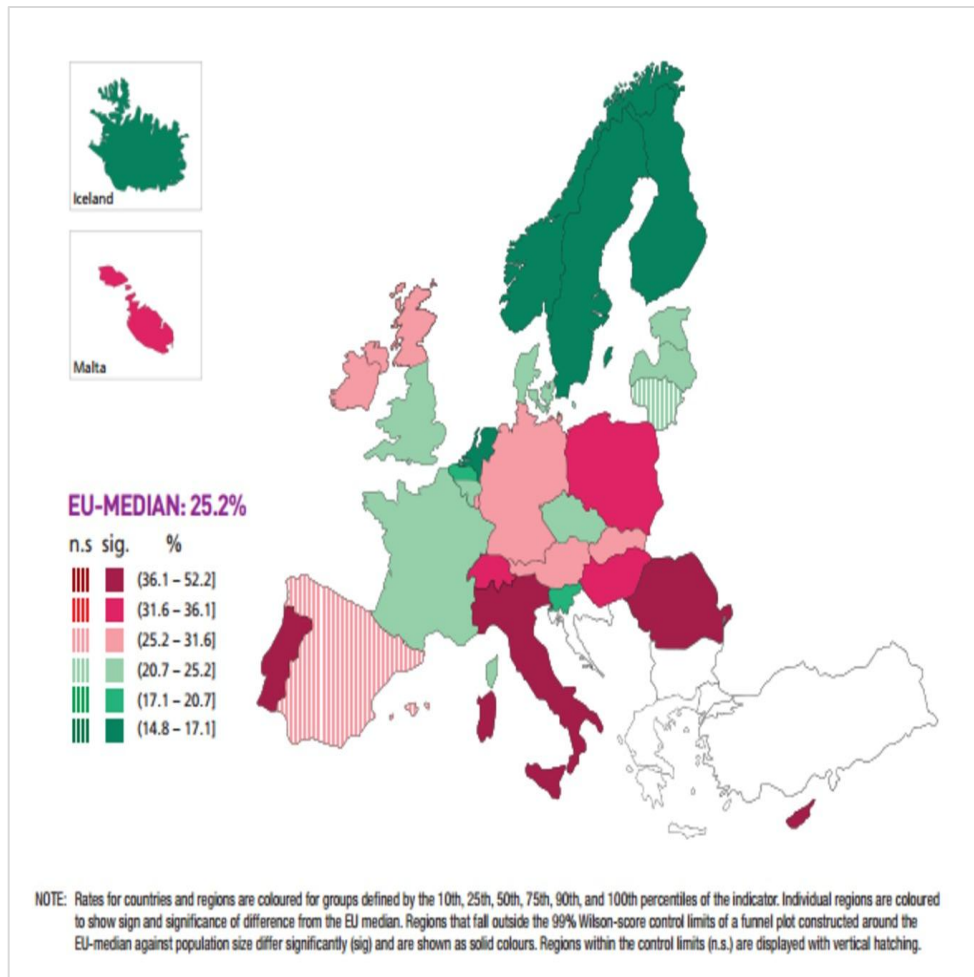# The Impact of Elective Caesarean Sections on Digestive Allergies, Cardiac Issues and Respiratory Issues

Tyannah Reed, RN, BSN, MPH

EU-MEDIAN: 25.2%

n.s	sig.	%
|||		(36.1 – 52.2]
|||		(31.6 – 36.1]
|||		(25.2 – 31.6]
|||		(20.7 – 25.2]
|||		(17.1 – 20.7]
|||		(14.8 – 17.1]

NOTE: Rates for countries and regions are coloured for groups defined by the 10th, 25th, 50th, 75th, 90th, and 100th percentiles of the indicator. Individual regions are coloured to show sign and significance of difference from the EU median. Regions that fall outside the 99% Wilson-score control limits of a funnel plot constructed around the EU-median against population size differ significantly (sig) and are shown as solid colours. Regions within the control limits (n.s.) are displayed with vertical hatching.

- ◆ **27% OF ALL BIRTHS IN IRELAND WERE BY CAESAREAN SECTION**

- ◆ **13% OF THESE WERE ELECTIVE (GUI).**

- ◆ **THE OPTIMAL C-SECTION RATE IS 10-15% (WHO).**

Lack, 2011

HEALTH IMPLICATIONS

Growing Up in Ireland
National Longitudinal
Study of Children

Short-term:
Impaired lung function, altered metabolism/feeding, impaired immunity and altered blood pressure.

Long-term:
increased rates of asthma, type II diabetes, digestive allergies, and immune-related conditions, altered hepatic function

(Hyde et al. 2012)

AIMS

- ✓ Decribe the association between mode of delivery and the child's health
- ✓ Examine rates of digestive allergies, cardiac abnormalities and respiratory issues.
- ✓ Examine rates of digestive allergies, cardiac abnormalities and respiratory issues.

- ✓ Compare these rates in children born by full term elective C-section to those born by full term vaginal delivery.
- ✓ Analyse the significance in the difference in rates
- ✓ Control for confounders

Longitudinal Cohort Study

Infant cohort: Age 9 months & 3 years

Sources of participants / data:

Children were selected randomly from the Child Benefit Register to represent 1/3 of total births that year (2008).

Sample Size: 11,000

Ascertainment of study data:

Questionnaires to primary caregivers, childminders and non-resident caregivers. 90% of those interviewed in Wave 1 were re-interviewed in the same manner for Wave 2

DATA MANAGEMENT

- **Merging of Wave 1 and 2 Files**
- **Selection of relevant variables**
- **New Binary Variable: Primary Caregiver education level**
    -High School or less and High school or above
- **Health outcomes ascertained from select all that apply question**
    -Responses coded 1=yes 0 (system missing) =no

H22. *[Card H22]* **Has a medical professional ever told you that <baby> has any of the following conditions?**
[Tick all that apply]

a. Respiratory disease [including asthma] ☐₁

b. Heart abnormalities ....☐₂

c. Digestive allergies (e.g. lactose intolerant) ....☐₃

d. Eczema or any kind of skin allergy ....☐₄

e. Difficulty hearing or deafness (Do not include a temporary loss of hearing due to a cold or congestion)..☐₅

f. Difficulty seeing..☐₆

g. A problem with mobility or using his/her arms/legs to get around ....☐₇

SAMPLING FRAME

- All participants born by mode aside from Elective C-section or Normal Delivery eliminated

- Only participants born at 39 or 40 weeks or 'on time' used

STATISTICAL ANALYSIS

- **IBM SPSS Version 20**

❖Descriptive Statistics

❖Pearson Chi Square Tests

❖Logistic Regression

Variables	Categories	Valid Denom. (n)	n	%
	Elective CS	n=4,040	720	17.8%
Delivery Mode:	Normal VD	n=4,040	3320	82.8%
			Yes:	
Digestive Allergies: 9mos		n=4,040	155	3.8%
Cardiac Issues 9mos		n=4,040	85	2.1%
Asthma: 9mos		n=4,040	146	3.6%
Digestive Allergies: 3yrs		n=4,040	39	1.0%
Cardiac Issues 3yrs		n=4,040	24	0.6%
Asthma: 3yrs		n=4,040	171	3.2%

Variables		Mean (SD)
Primary Caregiver Age in years (yrs)		30.1 (6.0)
Household Income (€)		49,716.7 (30,653.5)
	Categories	**n (%)**
Primary Caregiver's Education Level	Above High School	2,751.0 (68.1%)
	High School or Less	1,281.0 (31.7%)
Baby's Gender	Female	2,081.0 (51.5%)
	Male	1,959.0 (48.5%)
Ever Exclusively Breastfed	Yes	1,999.0 (82.6%)
	No	420.0 (17.4%)

SD = Standard Deviation

Variables	Normal VD Total (n)	%	Elective CS Total (n)	%
Digestive Allergies: 9mos	123	3.7%	32	4.4%
Cardiac Issues: 9mos	67	2.0%	18	2.5%
Asthma: 9mos	115	3.5%	31	4.3%
Digestive Allergies: 3yrs	36	1.1%	3	0.4%
Cardiac Issues: 3yrs	22	0.7%	2	0.3%
Asthma: 3yrs	129	3.9%	42	5.8%

Variables	Unadjusted OR (95% CI)	Significance	Adjusted OR* (95% CI)	Significance
Digestive Allergies: 9mos	1.21 (0.81-1.80)	p=0.350	1.05 (0.60-1.83)	p=0.878
Digestive Allergies: 3yrs	0.38 (0.12-1.24)	p=0.110	0.45 (0.10-1.92)	p=0.278

*Adjusted for primary caregiver's income, edu and age, infant's gender and breastfeeding

Variables	Unadjusted OR (95% CI)	Significance	Adjusted OR* (95% CI)	Significance
Cardiac Issues: 9mos	1.25 (0.74-2.11)	p=0.415	1.32 (0.66-2.63)	p=0.430
Cardiac Issues: 3yrs	0.42 (0.10-1.78)	p=0.238	n/a	n/a

n/a is due to unstable results from model

*Adjusted for primary caregiver's income, edu and age, infant's gender and breastfeeding

ASSOCOATION BETWEEN CS AND PULMONARY DISEASE

Variables	Unadjusted OR (95% CI)	Significance	Adjusted OR (95% CI)	Significance
Asthma: 9mos	1.13 (0.85-1.49)	p=0.408	1.24 (0.81-1.91)	p=0.327
Asthma: 3yrs	1.53 (1.07-2.19)	p=0.019	1.47 (0.85-2.54)	p=0.165

*Adjusted for primary caregiver's income, edu and age, infant's gender and breastfeeding

There is no statistically significant associations were found between elective C-Sections and digestive allergies, cardiac issues, or pulmonary issues after adjusting for the confounders.

Thank you for listening ☺

Questions?

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