



FETAL AND INFANT OUTCOMES OF ALCOHOL AND DRUG USE DURING PREGNANCY

Marcis Trapencieris

- 
- Substance use during pregnancy is often associated with lower rate of prenatal care and with higher risk for spontaneous abortions, pre-term delivery, fetal and neonatal mortality among other life-long consequences for newborns

- 
- Tobacco use during pregnancy related to placental abruption, premature delivery, fetal growth, stillbirth, etc.
 - Existing and growing evidence about alcohol use during pregnancy, e.g. FAS, FASD, small body size and weight, CNS handicaps, mental retardation, learning problems, etc.
 - Illegal drug use preterm delivery, several malformation of urogenital system, CNS malformations, etc. In late pregnancy – withdrawal symptoms

Objectives



- Assess substance use during pregnancy and estimate its effect on pregnancy, prenatal care, and outcomes (mortality)
 - ▣ Without (known) substance use during pregnancy
 - ▣ Substance use (alcohol and drugs) during pregnancy and/or during neonatal period

Methods



- Record-linkage
 - Treatment Demand Database (PREDA)
 - Health Insurance Database
 - Registry of Newborns
- 2007–2010 data

System PREDA

Basic information about patient

The population register (first name, surname, gender)

Patients with multiple sclerosis

Patients with substance abuse (TDI)

Patients with mental disorders

Patients with occupational diseases

Patients with tuberculosis

Patients with diabetes mellitus

Patients with cancer

Patients with congenital anomalies

Patients with injuries

The register of medical institutions and medical persons

General Mortality Register

Statistics and Data Analysis

Information service in accordance with the laws and regulations

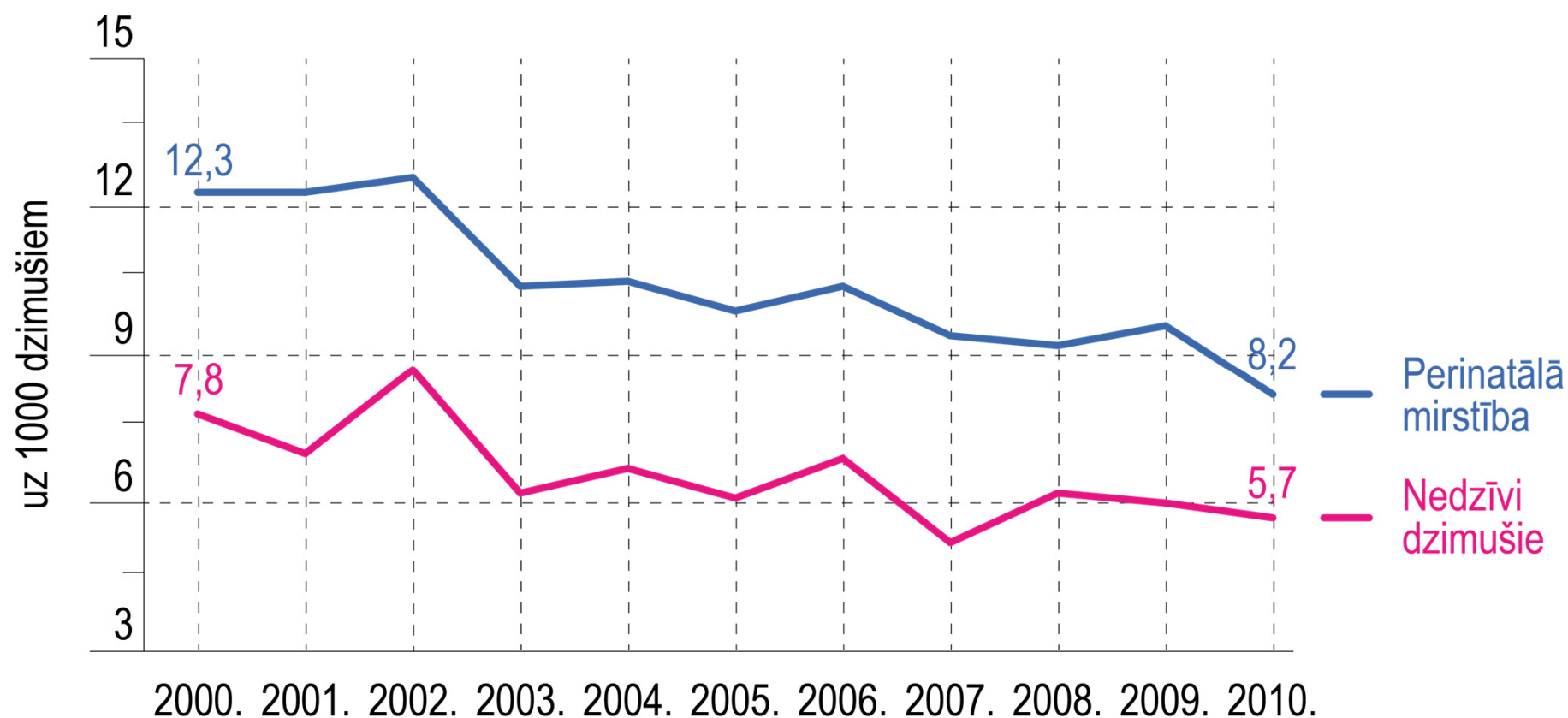
Health care persons

Other system users

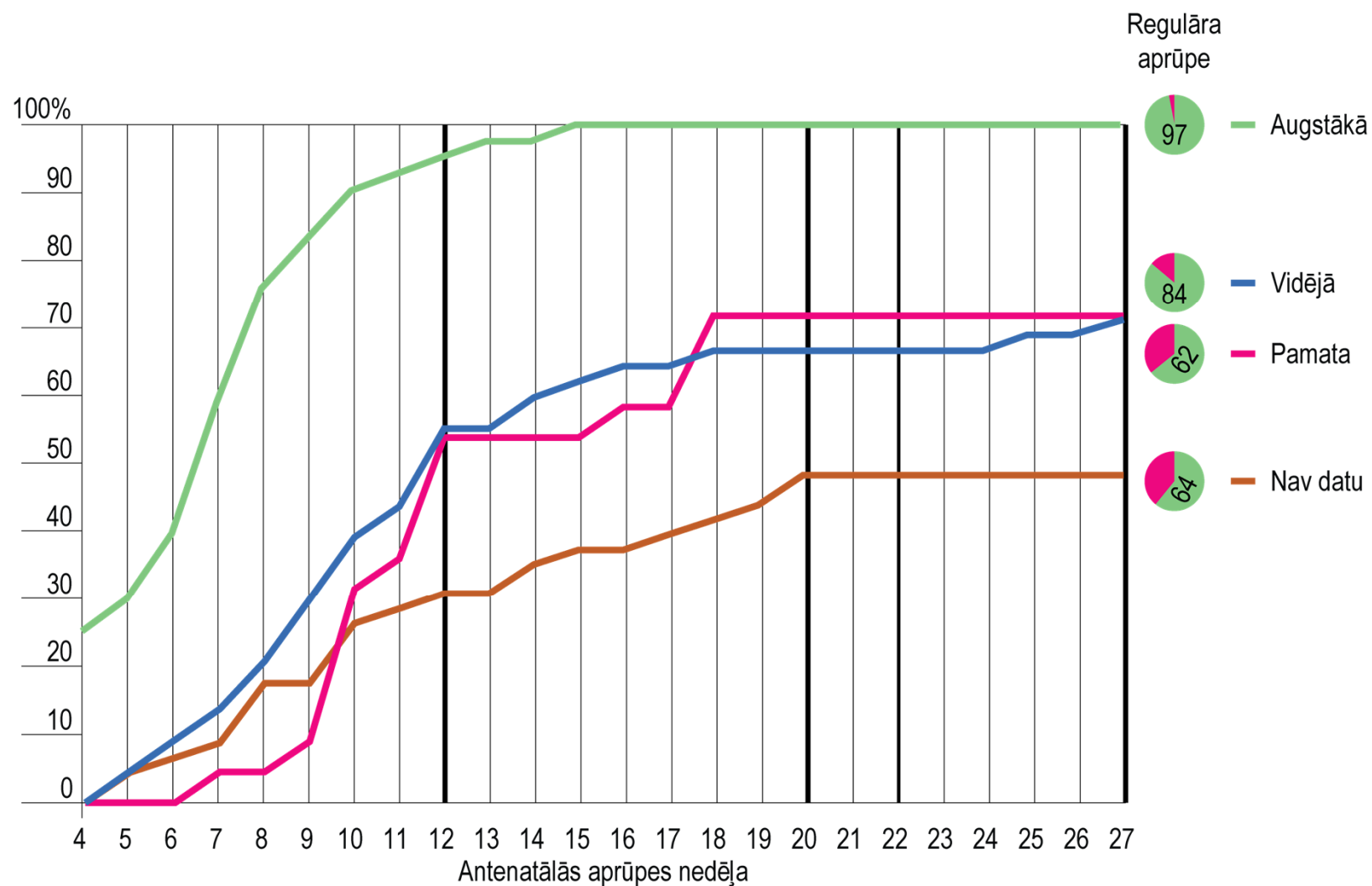
Description

- 88,581 birth records
 - ▣ decreasing annually
 - ▣ 23399 in 2007
 - ▣ 19254 in 2010
- 732 women (859 birth records) treated for substance use had at least one childbirth during 2007–2010
 - ▣ 22: three children
 - ▣ 76: two children
 - ▣ 634: one child


Stillbirths and perinatal mortality in Latvia



Prenatal care and education



	Non-using	Substance-using
Number	88044	537
	%	%
Low education	20.8	60.9
Medium education	43.7	35.6
High education	35.5	3.5
Capital	28.4	25.7
Major cities	14.6	13.0
Other	57.0	61.3
Mean age (SD)	27.5 (5.8)	28.2 (6.4)

- 
- Majority of women with SUD and childbirth had a treatment episode before pregnancy or after post-neonatal period (63%)
 - 117 were diagnosed with alcohol or drug use disorder during pregnancy
 - 151 were diagnosed with alcohol or drug use during neonatal and post-neonatal period

During pregnancy

Untreated

- Alcohol 313
- Drugs 137

Treated but not known to prenatal care

- Alcohol 46
- Drugs 31

Treated and known to prenatal care

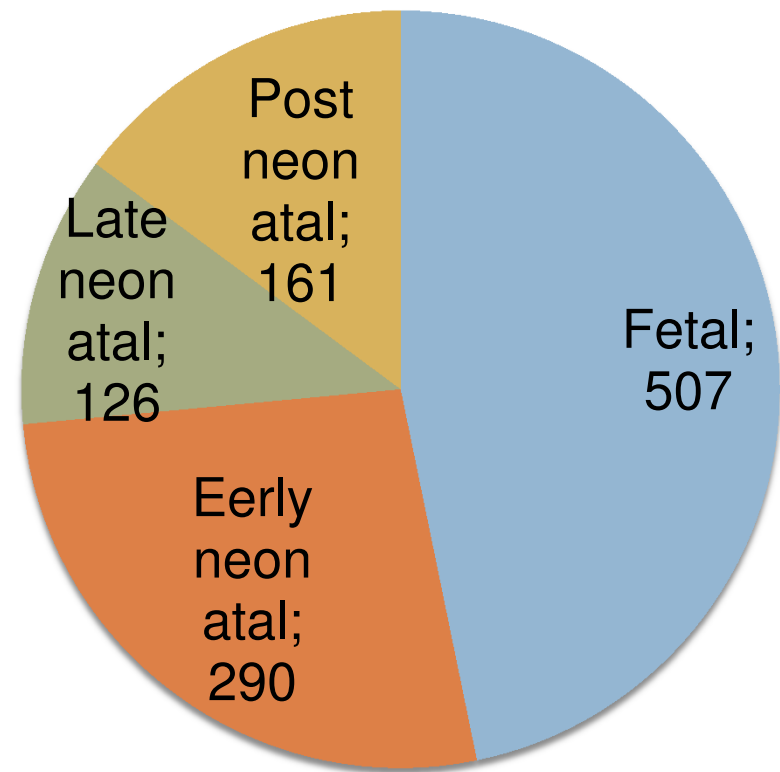
- Alcohol 7
- Drugs 32

Number of childbirths with substance use during pregnancy



- Total – 537
 - Alcohol 366
 - Drugs 198
- With treatment
 - Alcohol 53
 - Drugs 63
- Without treatment
 - Alcohol 313
 - Drugs 135

- **1084** Total number of newborn deaths
 - 34 attributed to substance using women



Unadjusted RR

$$I_d = n_d / n_{b_d}$$

$$I_{nd} = n_{nd} / n_{b_nd}$$

$$RR = I_d / I_{nd}$$

$$I_d / I_{nd}$$

Incidence among substance using
non-using

$$n_d / n_{nd}$$

substance

Number of deaths among
using / non-using

$$n_{b_d} / n_{b_nd}$$

Number of births among substance
using / non-using

Unadjusted RR

	Total	Perinatal	Late neonatal	Post neonatal
Alcohol	6.7 (4.6–9.8)	6.7 (4.6–9.9)	11.7 (5.3–25.7)	4.5 (1.5–14.0)
Drugs	3.4 (1.7–6.9)	3.0 (1.4–6.6)	7.2 (1.8–28.5)	5.6 (1.4–22.4)
Alcohol or drugs	5.5 (3.9–7.7)	5.4 (3.8–7.8)	9.3 (4.5–19.1)	5.2 (2.2–12.3)

Unadjusted RR (stratified)

	Total	Perinatal	Late neonatal	Post neonatal
SGA under 10 th pctlile	1.8 (0.9–3.6)	1.8 (0.9–3.8)	6.5 (2.5–16.4)	1.5 (0.2–10.7)
SGA over 10 th pctlile	7.0 (4.7–10.5)	6.9 (4.5–10.7)	7.1 (2.3–21.6)	6.9 (2.6–18.2)
Smoking	3.5 (2.5–4.9)	3.8 (2.6–5.5)	5.7 (3.0–10.9)	2.1 (0.8–5.4)
No smoking	4.2 (1.7–10.3)	3.9 (1.4–10.4)	–	6.1 (0.9–43.2)
No prenatal care	1.5 (1.0–2.4)	1.4 (0.9–2.3)	3.1 (1.6–6.2)	2.0 (0.7–5.6)
Medium prenatal care	1.4 (0.7–2.8)	1.5 (0.7–3.2)	1.8 (0.3–11.9)	0.9 (0.2–6.1)
Full prenatal care	5.1 (2.5–10.4)	5.2 (2.5–11.1)	–	4.4 (0.6–30.9)
Low education	3.7 (2.4–5.7)	3.8 (2.4–6.1)	5.9 (2.3–15.0)	3.2 (1.2–8.3)
Medium education	5.8 (3.3–10.2)	6.2 (3.5–11.1)	10.6 (3.5–32.3)	3.0 (0.4–21.3)
High education	–	–	–	–

Conclusions



- Substance use during pregnancy often not known to prenatal care
- No treatment received by women using substances during pregnancy
- Unadjusted RR for dying during first 12 months for children born to women using alcohol and/or drugs **5.5 times higher** as compared with women with no substance use