



VFN PRAHA
VŠEOBECNÁ FAKULTNÍ
NEMOCNICE

Introduction to Paediatrics

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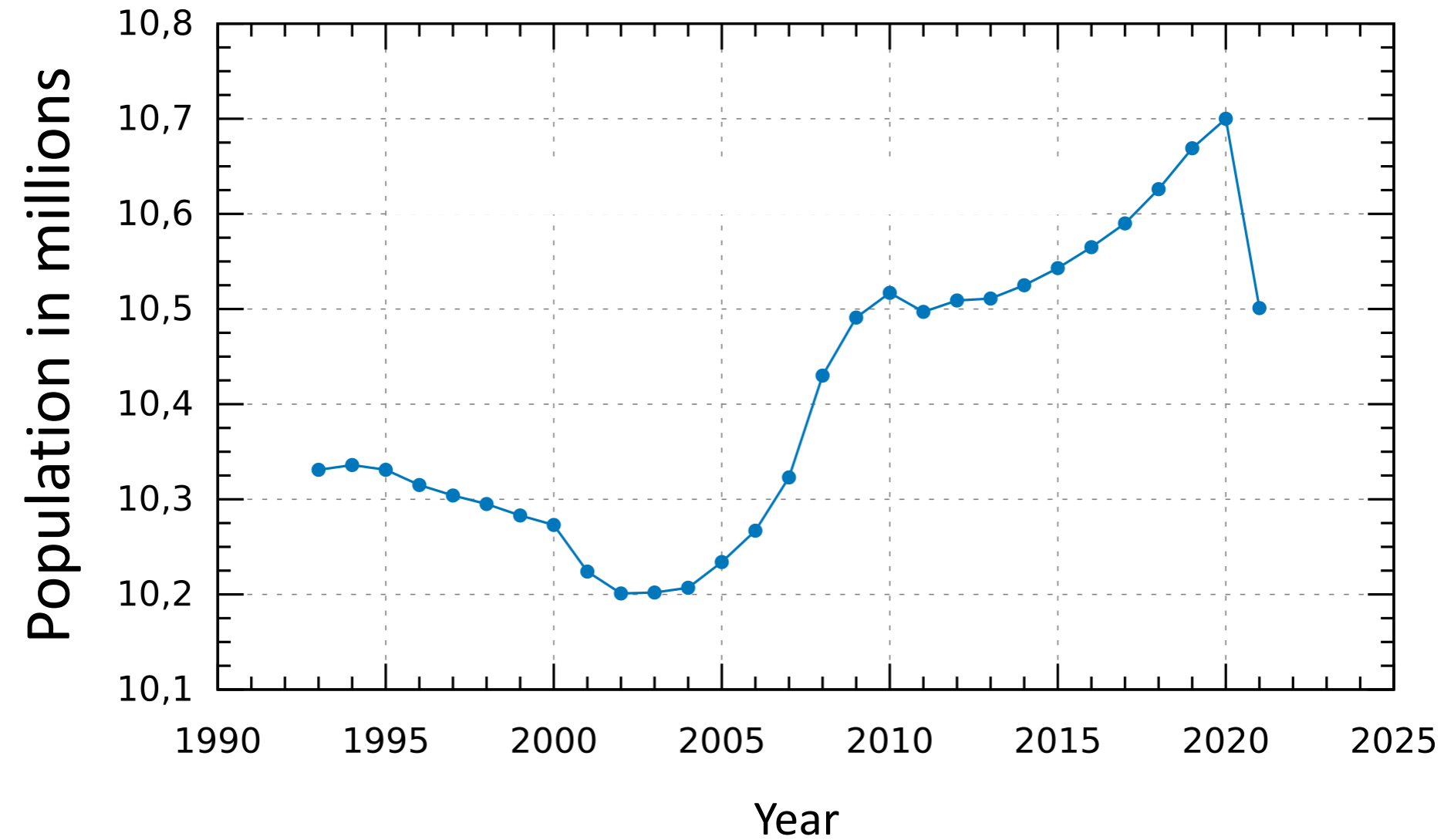
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Basics of Paediatric Clerkship

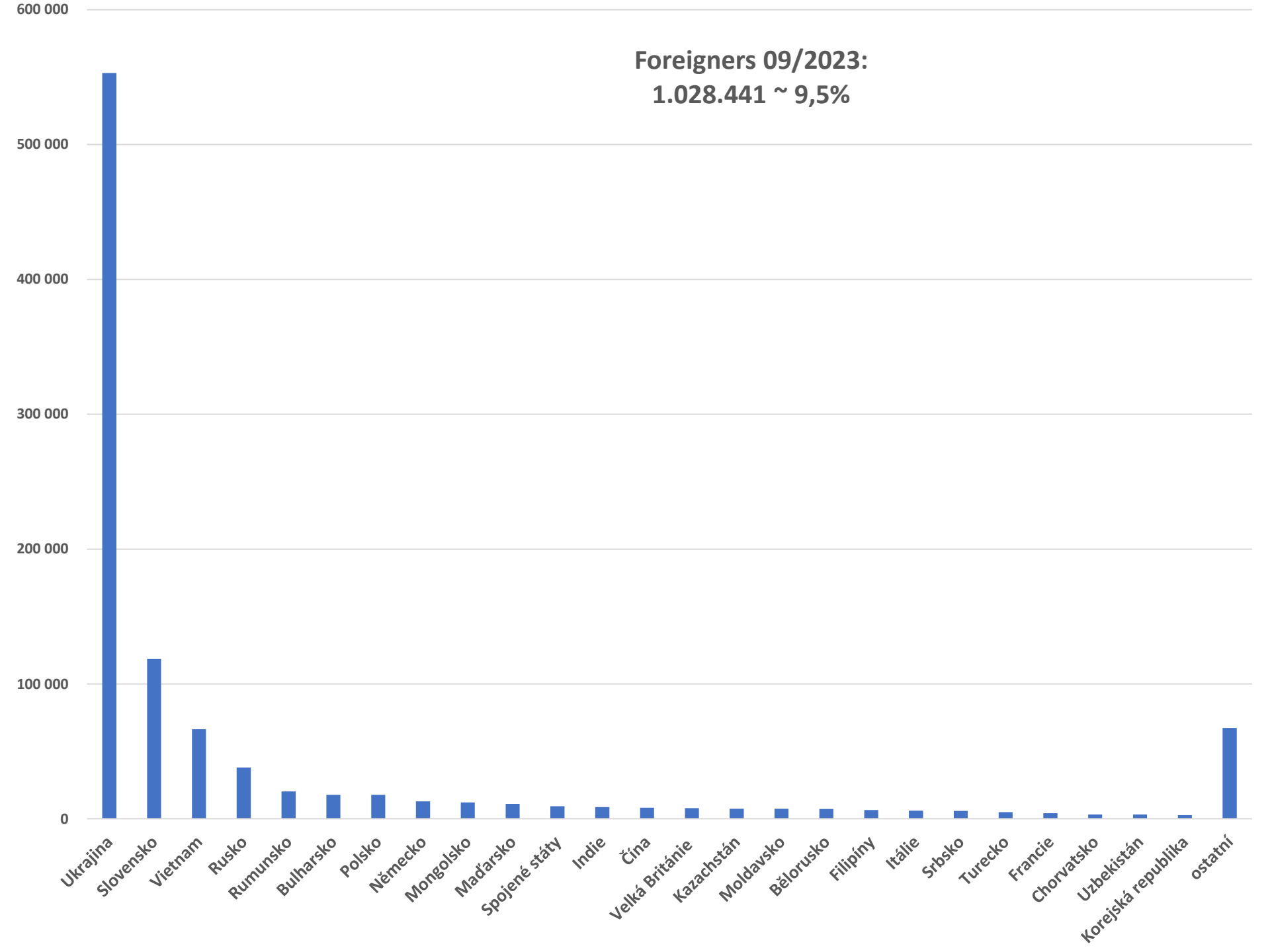
- demography
- screening in paediatrics
- immunization
- growth and child development
- principles of paediatric physical examination
- nutrition in childhood
- critically ill child

Demography – selected topics

The total population in the Czech Republic



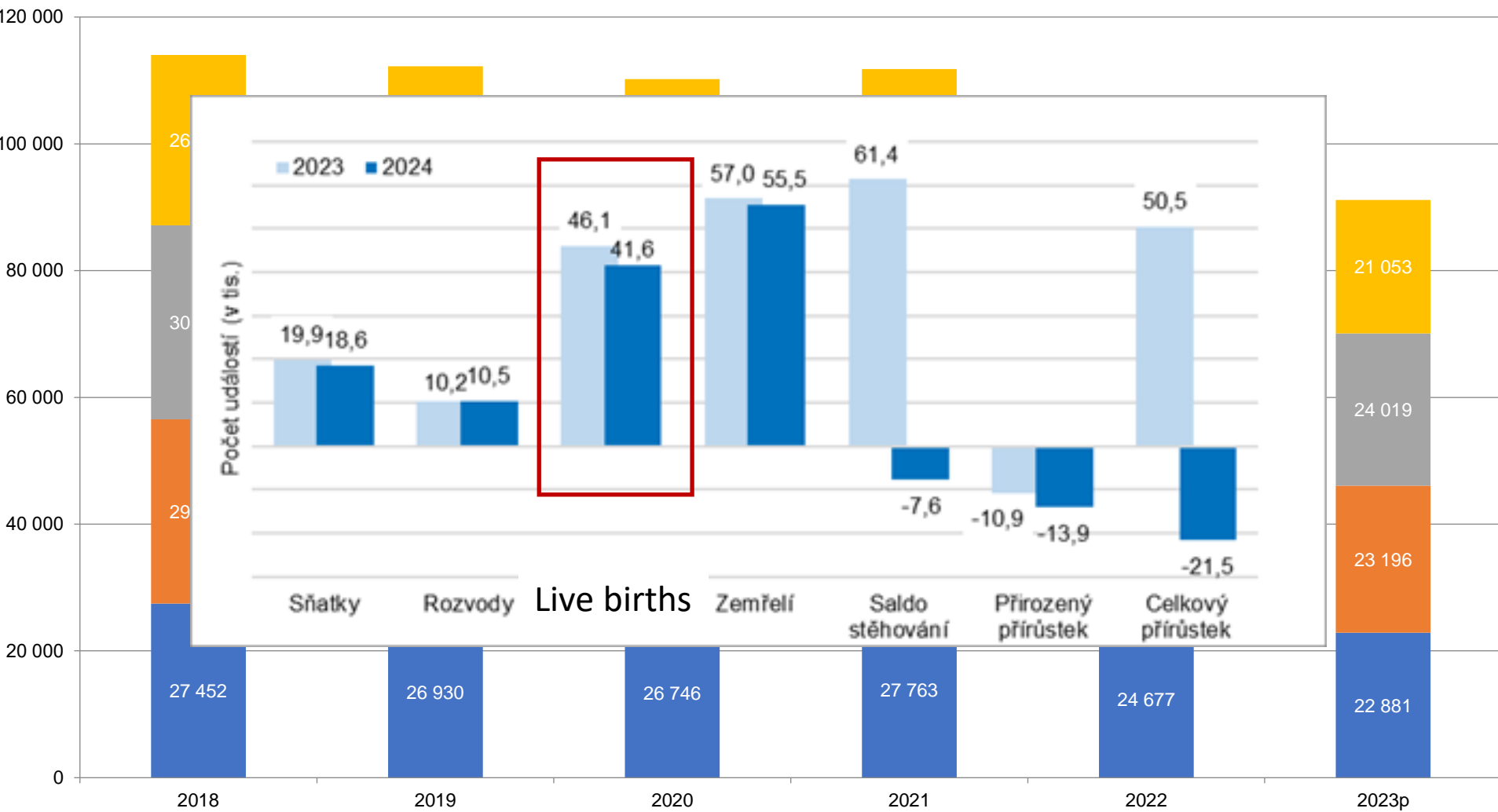
Foreigners 09/2023:
1.028.441 ~ 9,5%



Živě narození, čtvrtletní data, 2018–2023

Live births, quarterly data, 2018–2023

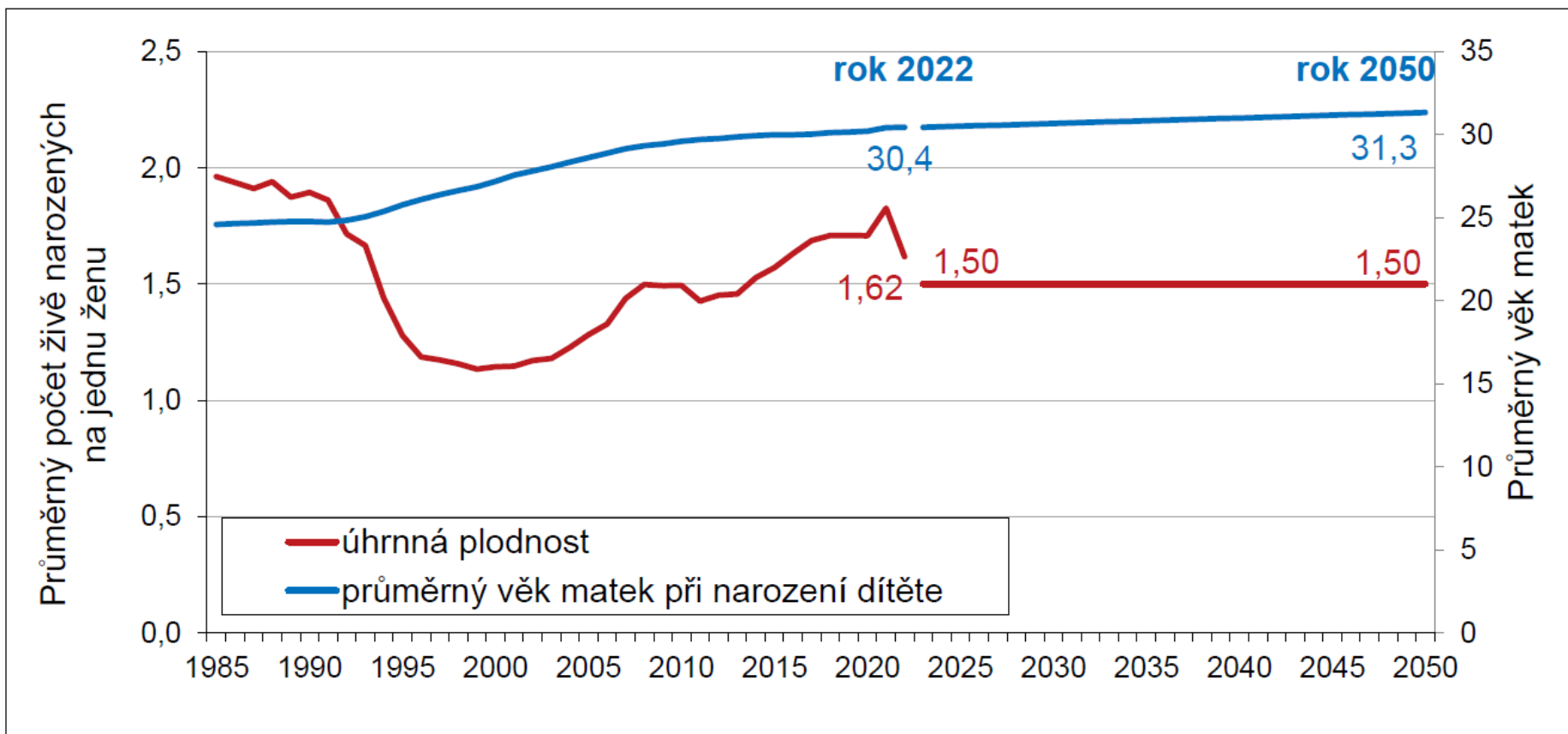
■ 1. čtvrtletí / Q 1 ■ 2. čtvrtletí / Q 2 ■ 3. čtvrtletí / Q 3 ■ 4. čtvrtletí / Q 4



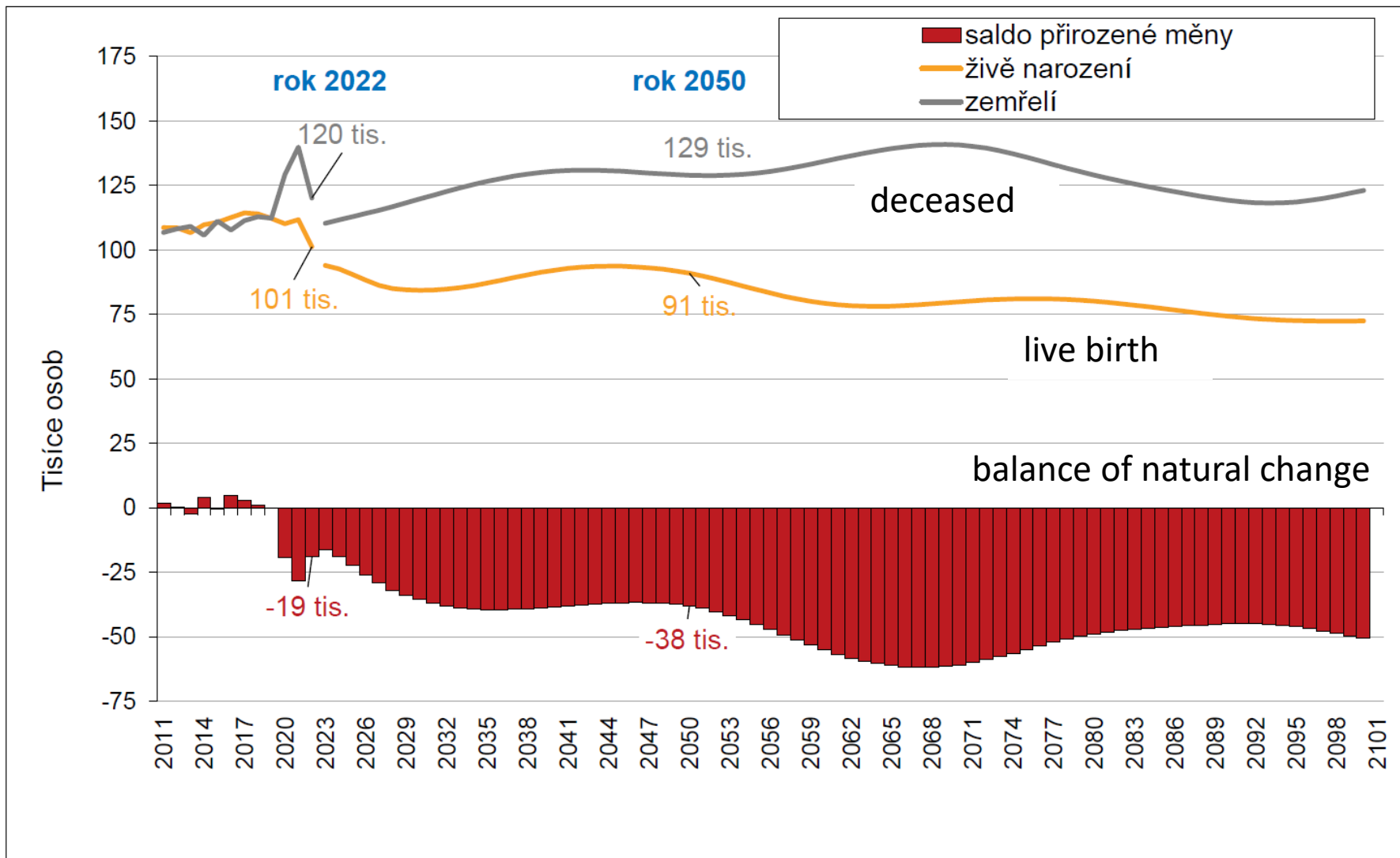
p - přeběžná data / preliminary data

Fertility	1,71	1,71	1,71	1,83	1,66	1,55
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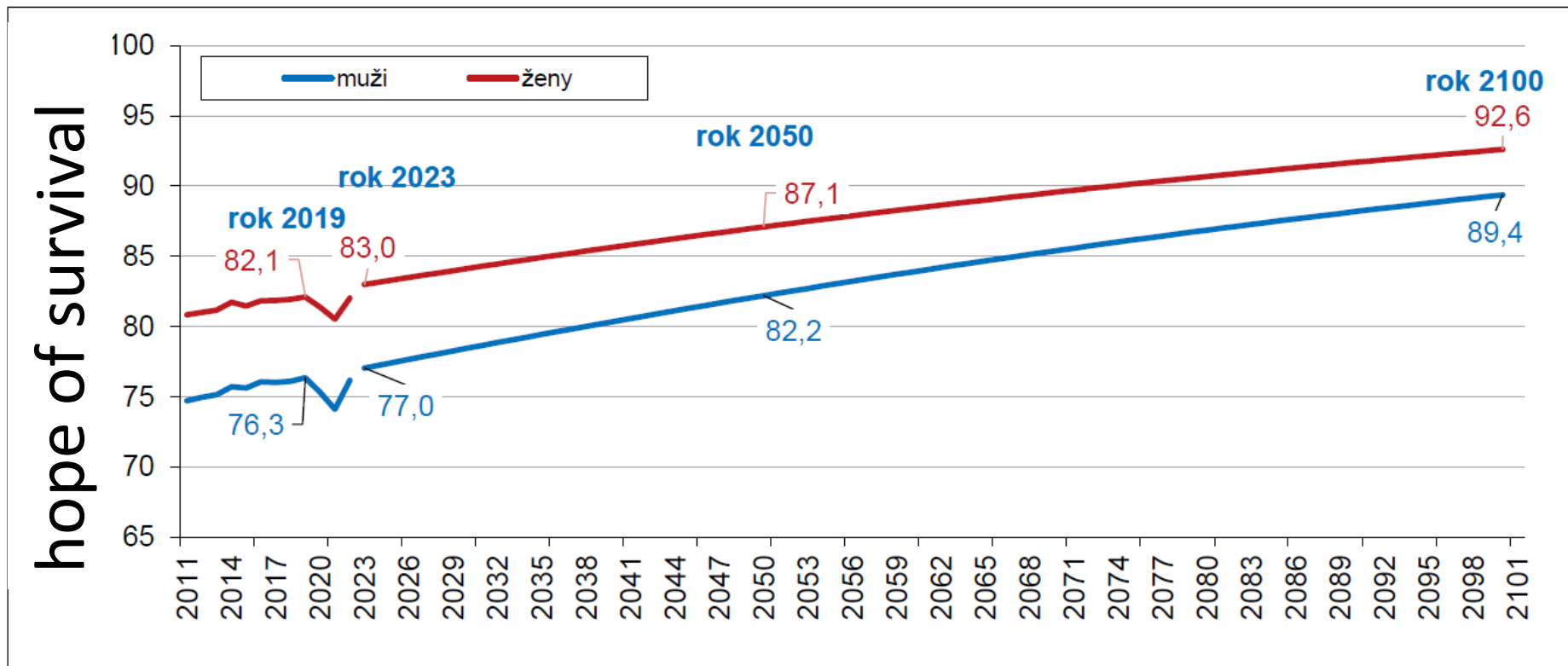
Scenario of fertility development



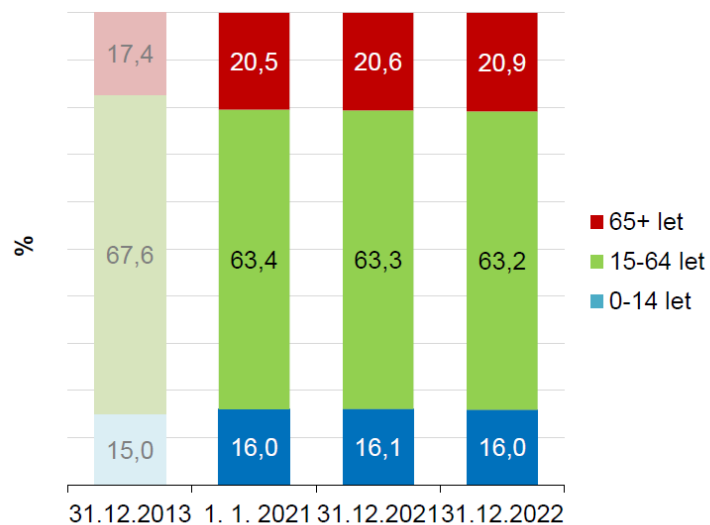
Evolution of natural change



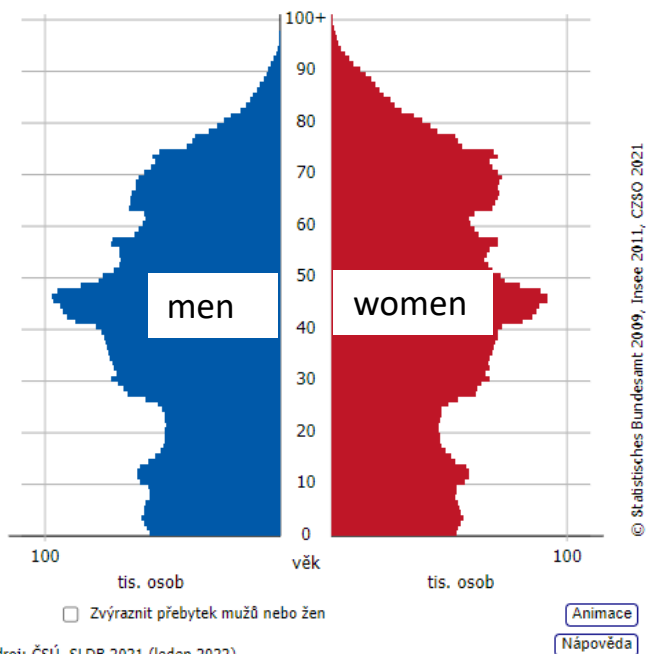
Scenario of mortality development



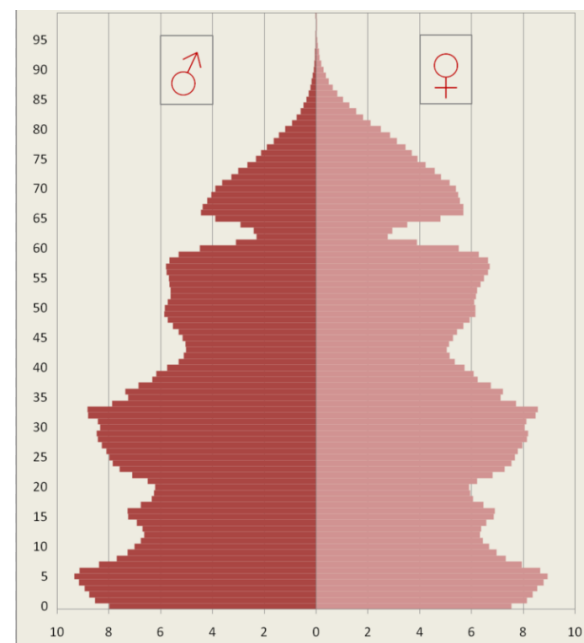
Population by age groups



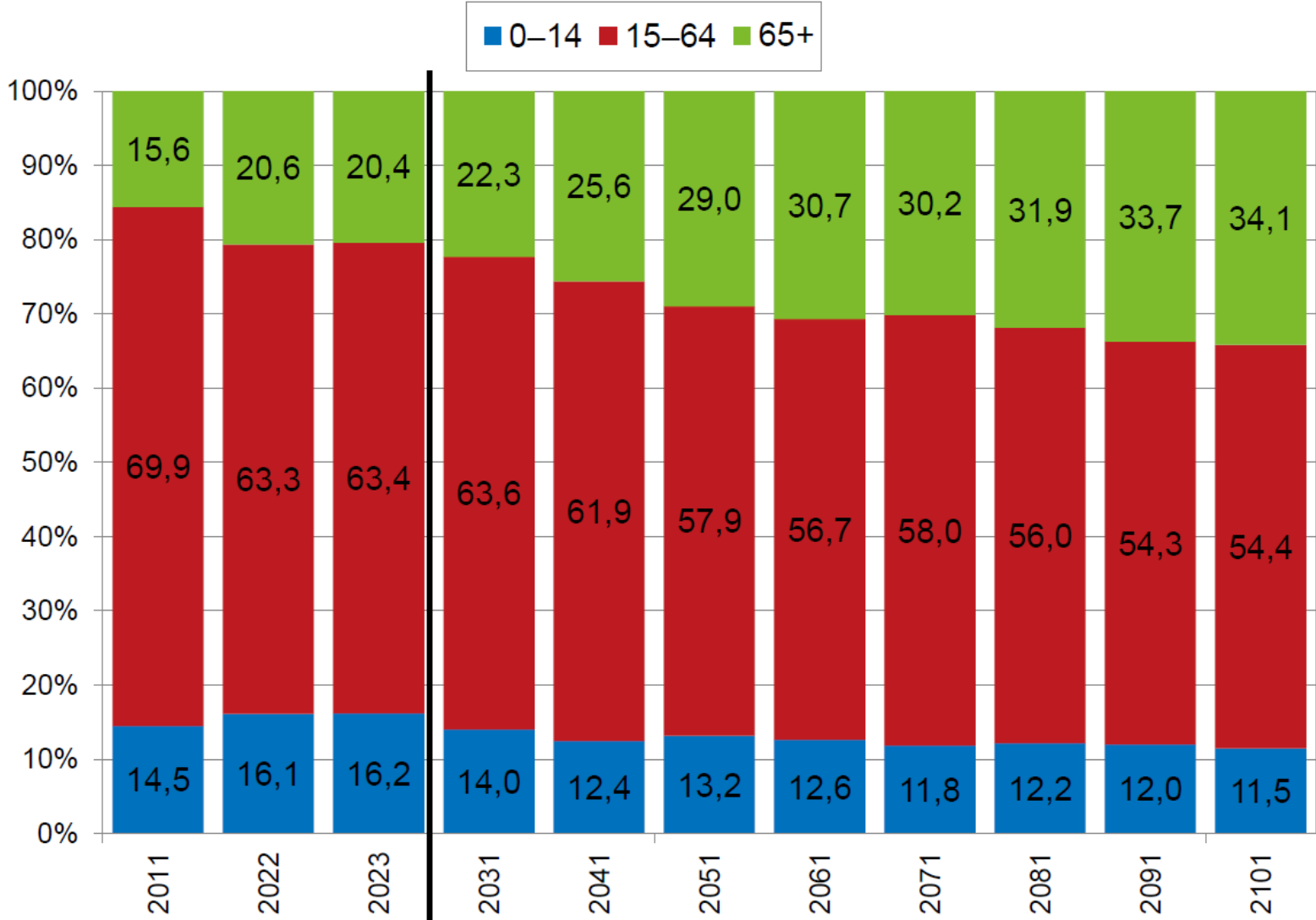
Age pyramid, Czechia, 2021



Age pyramid, Czechia, 1980



Population in the main age groups outlook



Infant mortality

1888

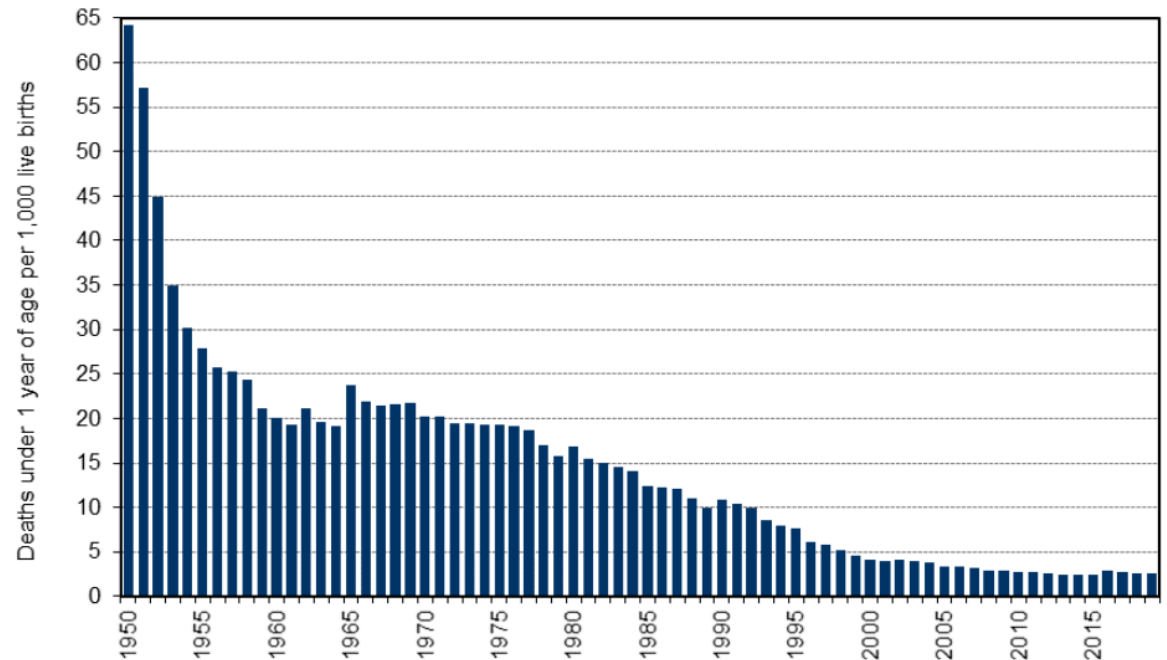
Infant mortality rate 330 promile

Infant mortality in the Czech Republic
1888 - 2019

Tab. 5. Průběh kojenecké úmrtnosti
v Československu a jeho zemích
v letech 1920—1947*)

Rok	Čechy	Morava a Slezsko	Slo- vensko	Česko- slovensko
1920	169	170	186	174
1925	133	131	179	143
1930	124	118	161	135
1935	109	99	142	118
1940	82	83	140	99
1941	87	83	135	100
1942	90	89	160	111
1943	93	91	151	109
1944	94	97	143	109
1945	124	123	172	138
1946	93	96	146	109
1947	79	74	114	88
1948	71	72	109	83
1949	67		114	82

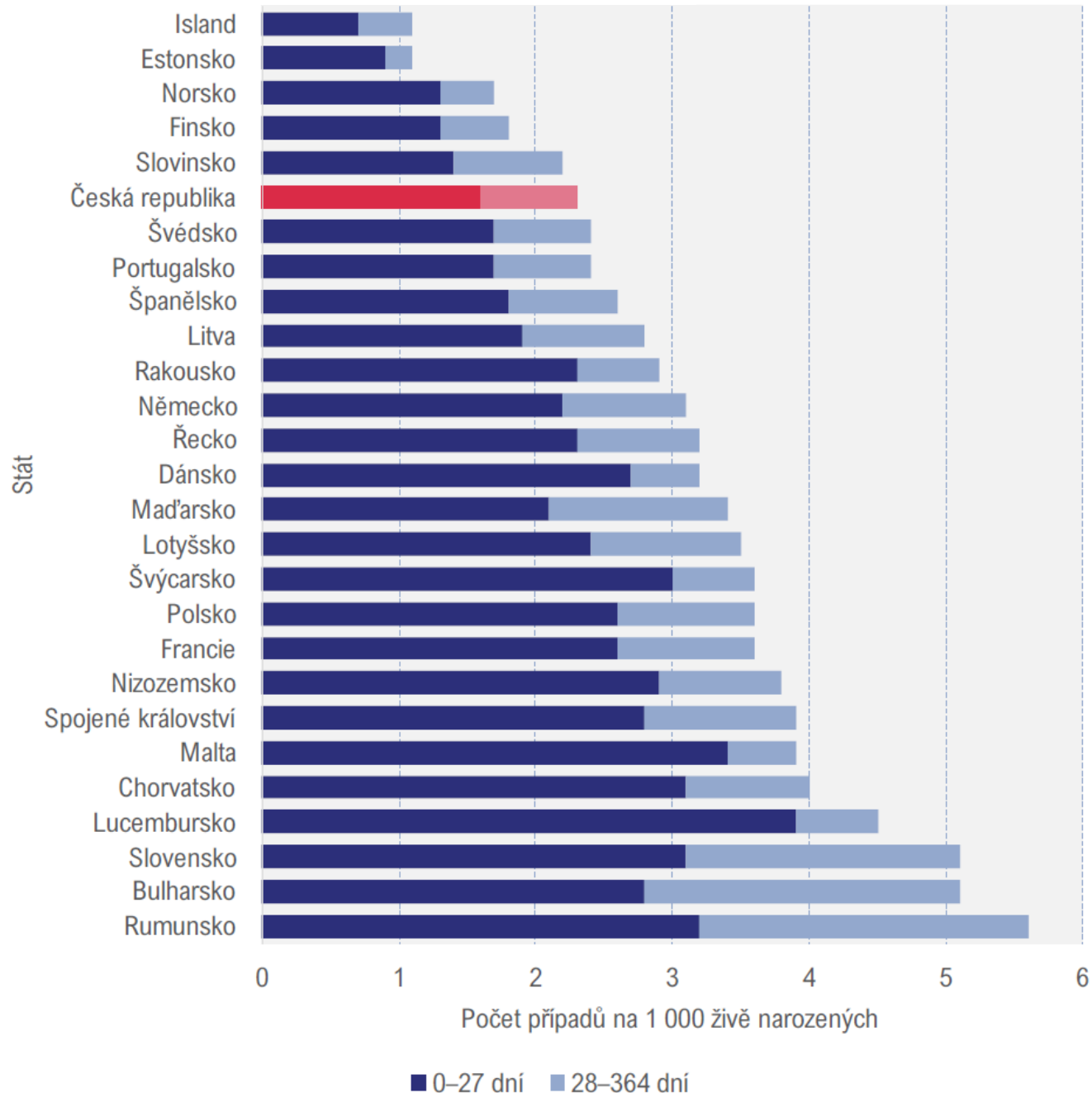
Infant mortality rate, 1950-2019



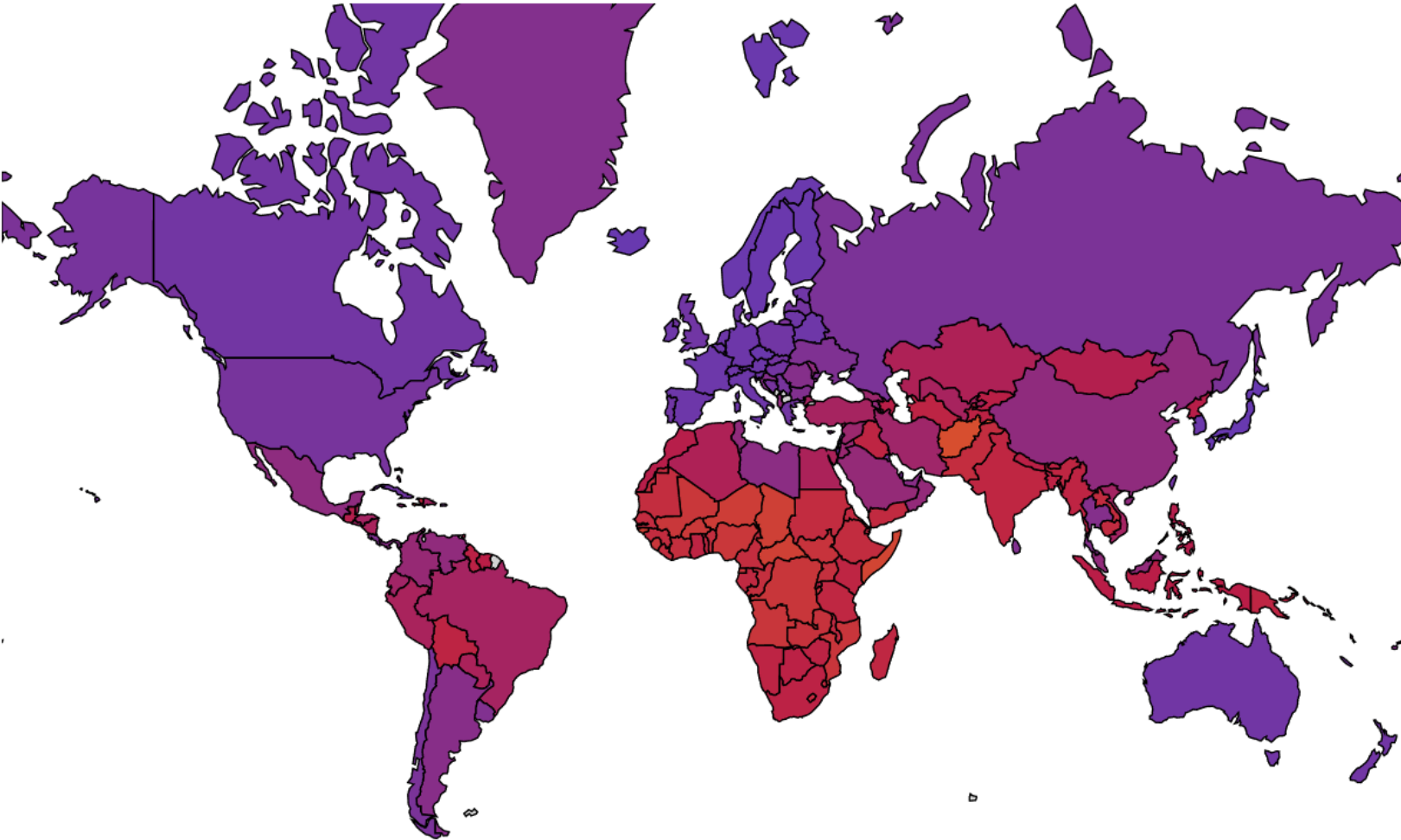
2023

Infant mortality rate 2.5 promile

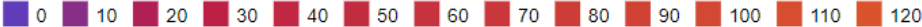
Infant mortality EU



Infant Mortality Rate by Country 2022

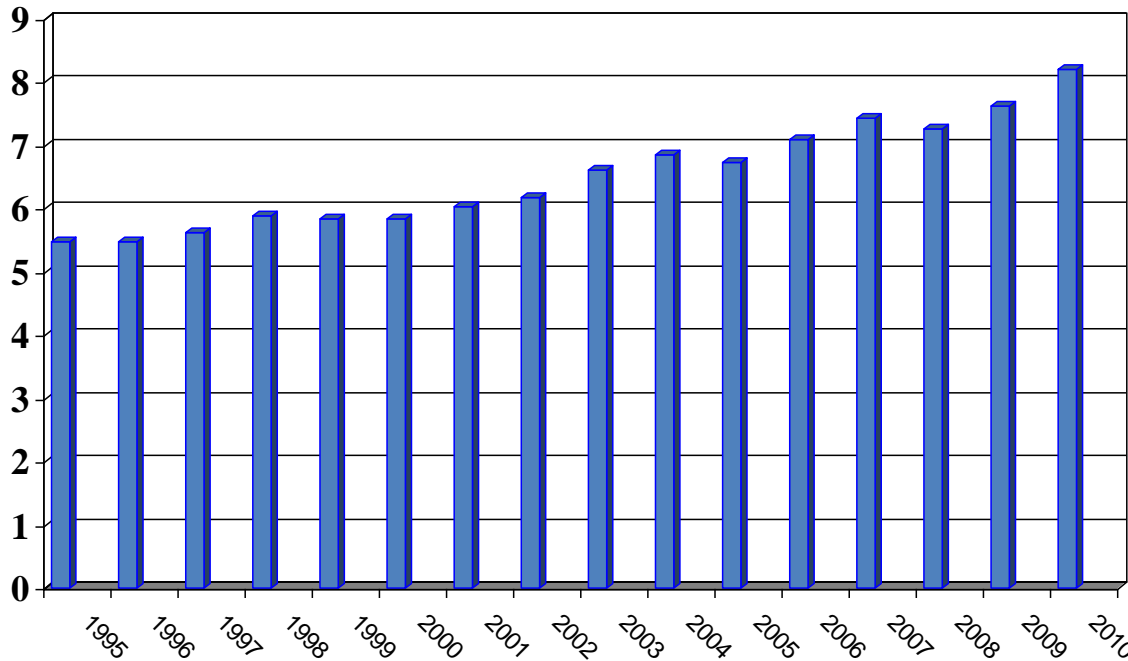


Infant Mortality Rate

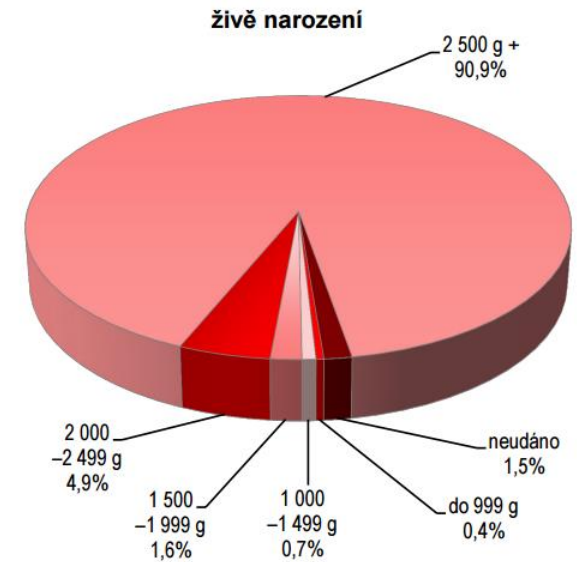


Prematurity rate

Birth weight < 2.5kg (8.5%)

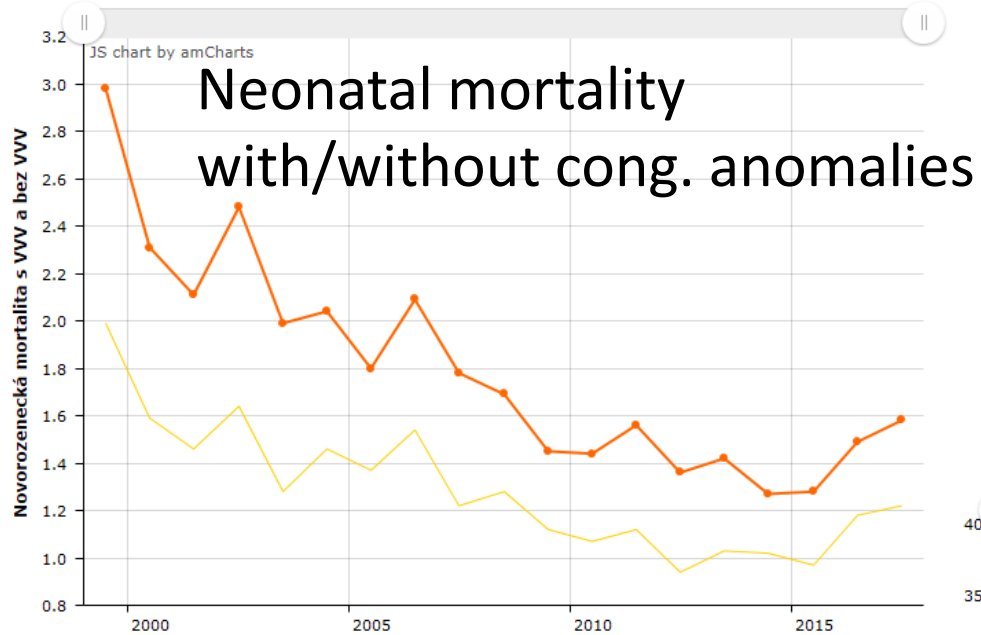


3. Struktura narozených podle porodní hmotnosti - živě narození a mrtvě narození

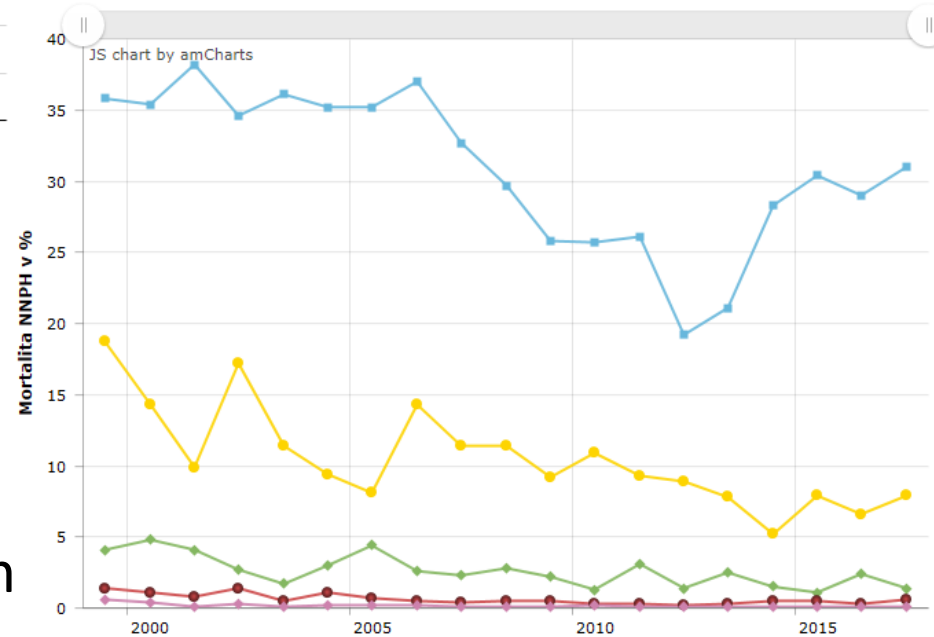


Birth weight < 1.5kg (2.7%)

Neonatal mortality



Neonatal mortality
According to birth weight - preterm



Immunization

Vaccination system in the Czech Republic

Age	Routine (requested) vaccines
2 mo	DTaP-Hib-HepB-IPV* - 1 st dose (IM) Pneumococcal conjugate (PCV13)¶ - 1 st dose (IM) <i>optional</i>
4 mo	DTaP-Hib-HepB-IPV - 2 nd dose (IM) Pneumococcal conjugate (PCV13) - 2 nd dose (IM) <i>optional</i>
11-12 mos	DTaP-Hib-HepB-IPV - 3 rd dose (IM) Pneumococcal conjugate (PCV13) - 3 rd dose (IM) <i>optional</i>
15-18 mos	MMR£ - 1 st dose (SC)
5-6 yrs	DTaP – booster dose (IM)
5-6 yrs	MMR – booster dose (SC)
10-11 yrs	DTaP-IPV – booster dose (IM)
13-14 yrs	HPV* (IM) <i>optional</i>

IM – intramuscular injection; mo/s – month(s); SC subcutaneous injection; yrs – years

*inactivated microorganisms – IPV; part of the organism – aP, HPV, HepB; polysaccharide capsule conjugated with protein carriers – Hib; toxoids – DT

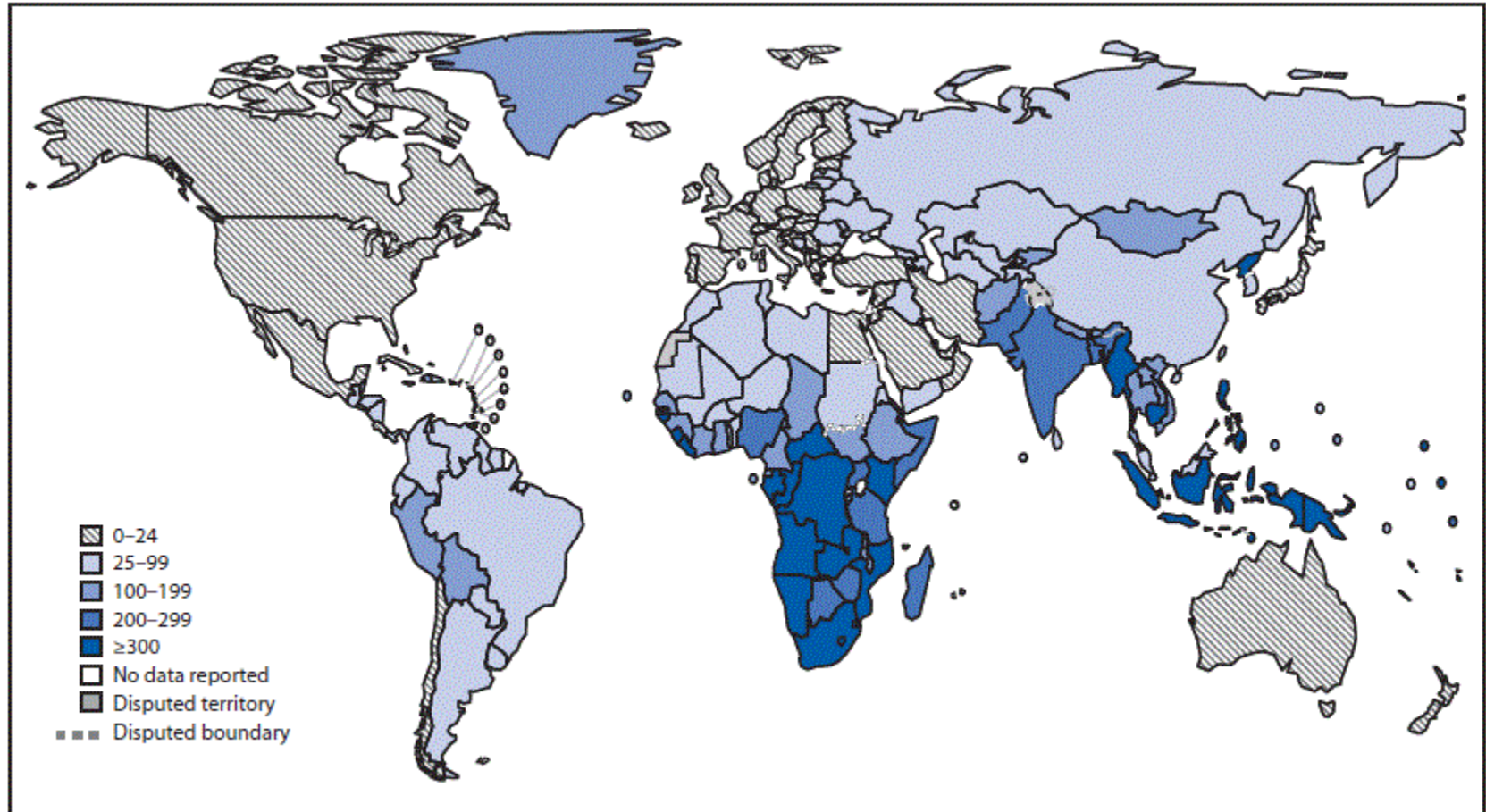
¶polysaccharide capsule conjugated with protein carrier

£live-attenuated

other optional vaccines (covered by Government) – MenB, MCV

All children in the Czech Republic should be vaccinated against 13 diseases

Annual tuberculosis incidence (per 100,000 population), by region — worldwide, 2017



Vietnam 176/100,000 (2020) 296/100,000 (2000)
Ukraine 77/100,000

Passive immunization

Product	Indications
Immune globulin intramuscular (IGIM)	Replacement therapy (antibody deficiency) Measles prophylaxis <u>HepA prophylaxis</u>
Immune globulin intravenous (IGIV)	PIMS-TS Kawasaki disease Varicella postexposure prophylaxis
<u>HepB immunoglobulin (IM)</u> <i>specific hyperimmune immunoglobulin</i>	Postexposure prophylaxis Prevention of perinatal infection
Rabies immunoglobulin (IM)	Postexposure prophylaxis
Tetanus immunoglobulin (IM)	Wound prophylaxis; treatment of tetanus
<u>Varicella-zoster immunoglobulin (IM)</u>	Postexposure prophylaxis
Palivizumab (monoclonal antibody), humanized mouse (IM)	Prophylaxis for infants against respiratory syncytial virus

PIMS-TS – pediatric inflammatory multisystem syndrome temporally associated with SARS-CoV2

Notes for physical examination

Pulse/respiratory rate, blood pressure

Normal resting pulse

Age	Beats/min
<1 year	110-160
2-4 years	95-150
5-12 years	80-120
>12 years	60-100

Respiratory rate (breaths/min)

Age	Normal	Tachypnoea
0-2 months	30-50	>60
Infant	25-40	>50
1-5 years	25-35	>40
6-8 years	20-25	>30
>8 years	15-20	>20

Age	sBP mmHg	Upper limit
Newborn	50-70	80
Infant	70-90	100
1-5 years	80-100	110
6-10 years	90-110	120



Balloon in the cuff >2/3 of the length of the upper arm