



VFN PRAHA
VŠEOBECNÁ FAKULTNÍ
NEMOCNICE

Introduction to Paediatrics

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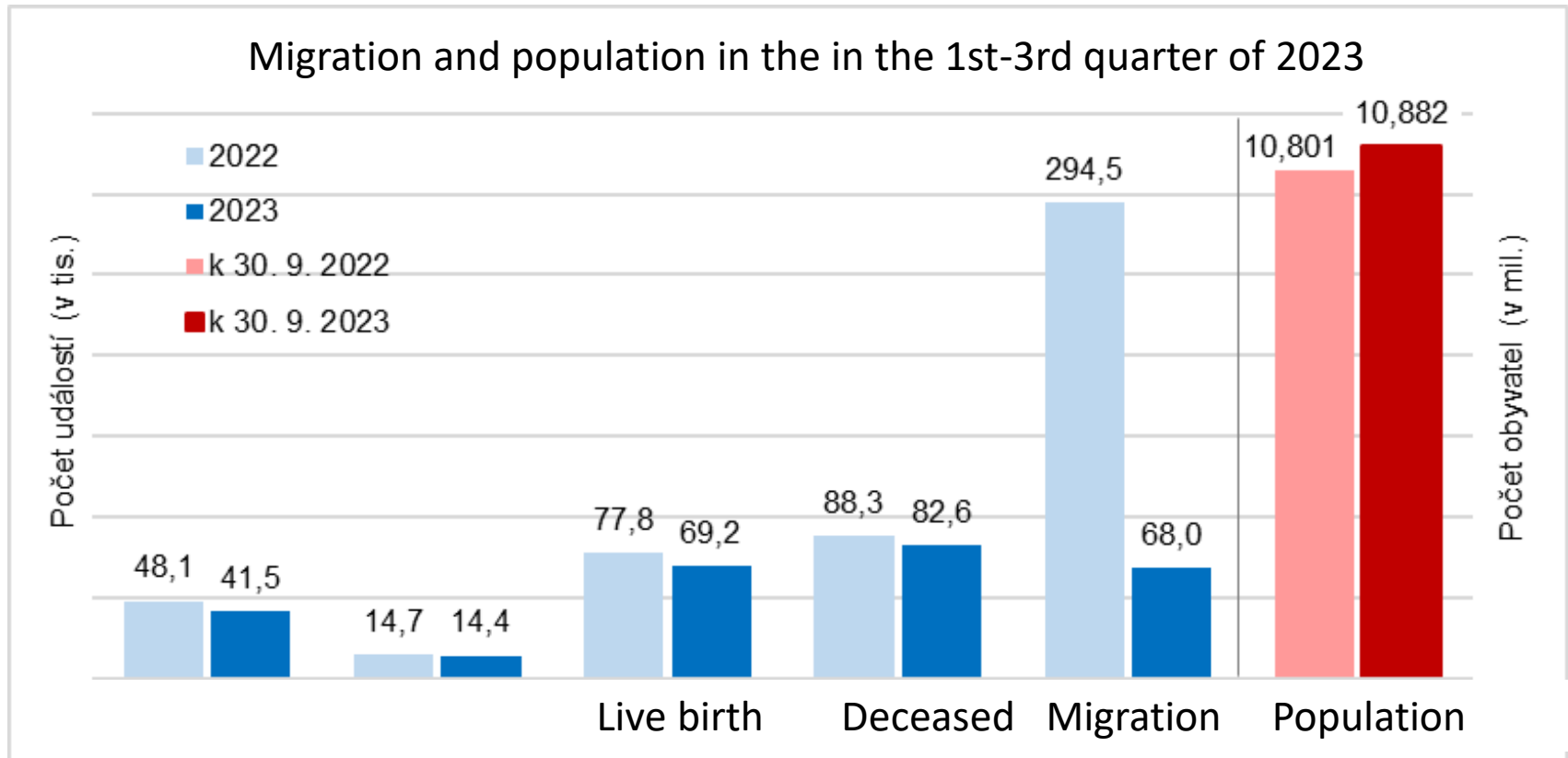
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Basics of Paediatric Clerkship

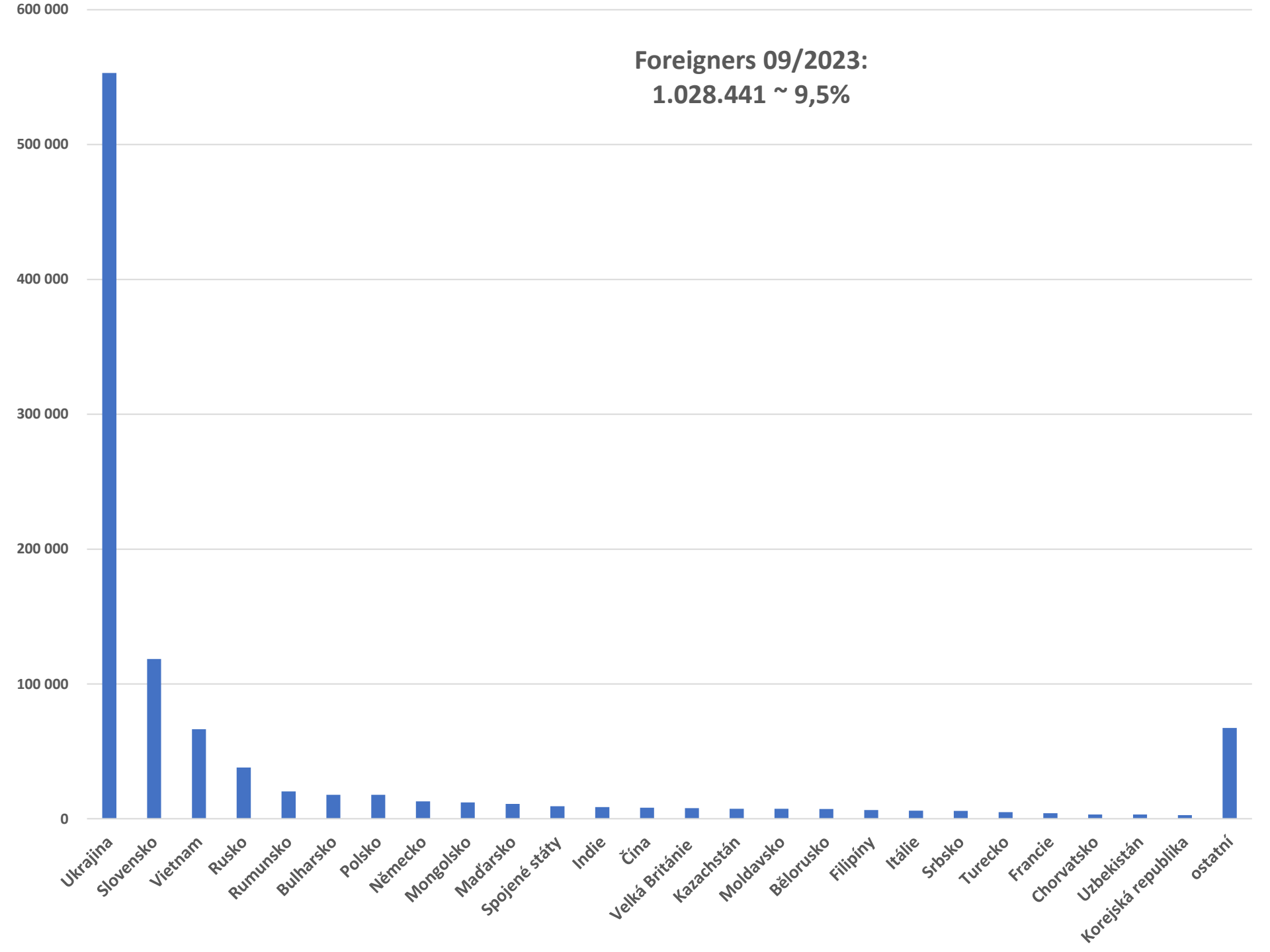
- demography
- screening in paediatrics
- immunization
- growth and child development
- principles of paediatric physical examination
- nutrition in childhood
- critically ill child

Demography – selected topics

The total population in the Czech Republic



Foreigners 09/2023:
1.028.441 ~ 9,5%



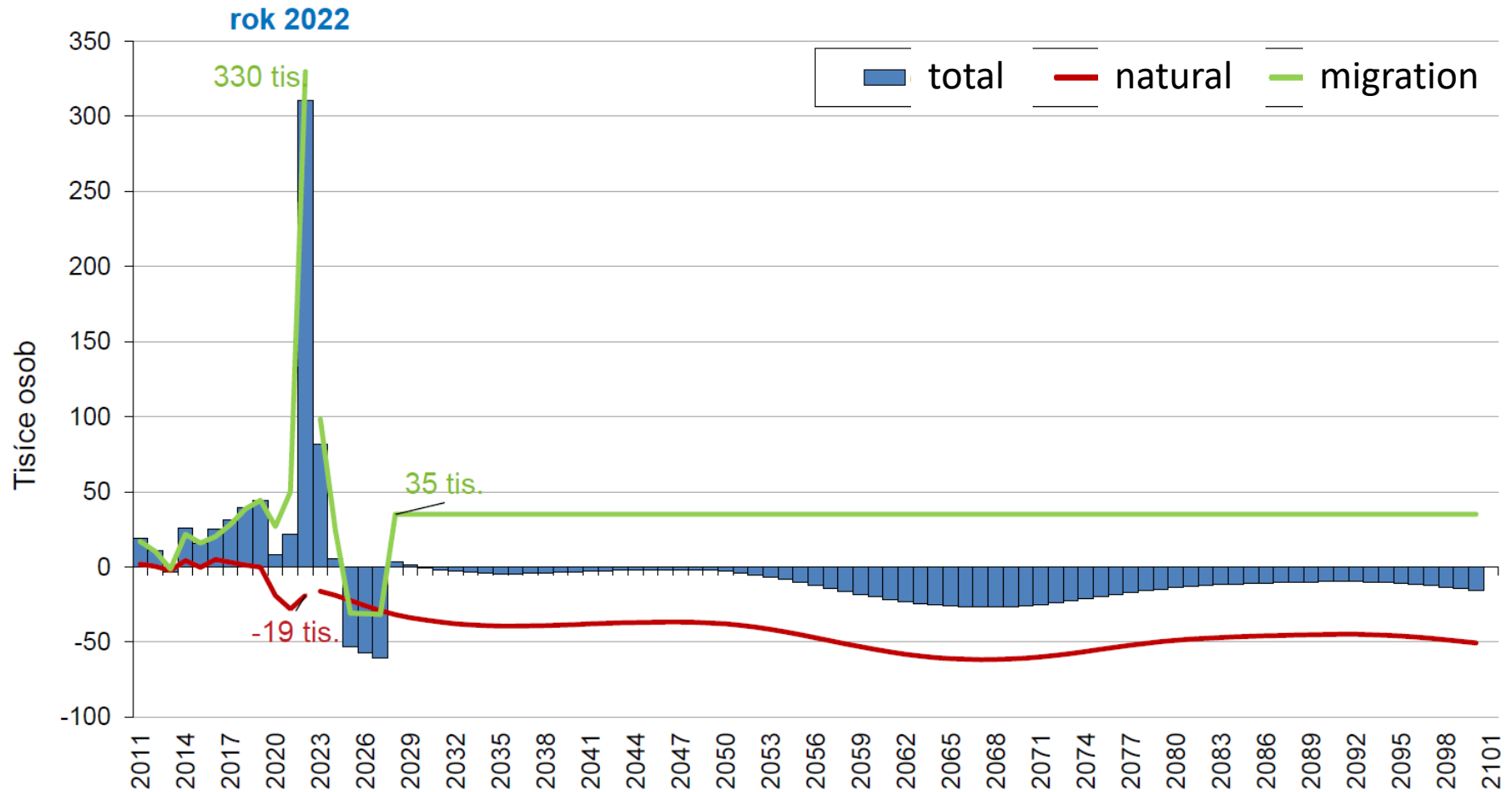
T06 Cizinci podle pohlaví a věku k 31. 12. 2022¹⁾
Foreigners by sex and age as at 31 December 2022¹⁾

Pramen: Ředitelství služby cizinecké policie

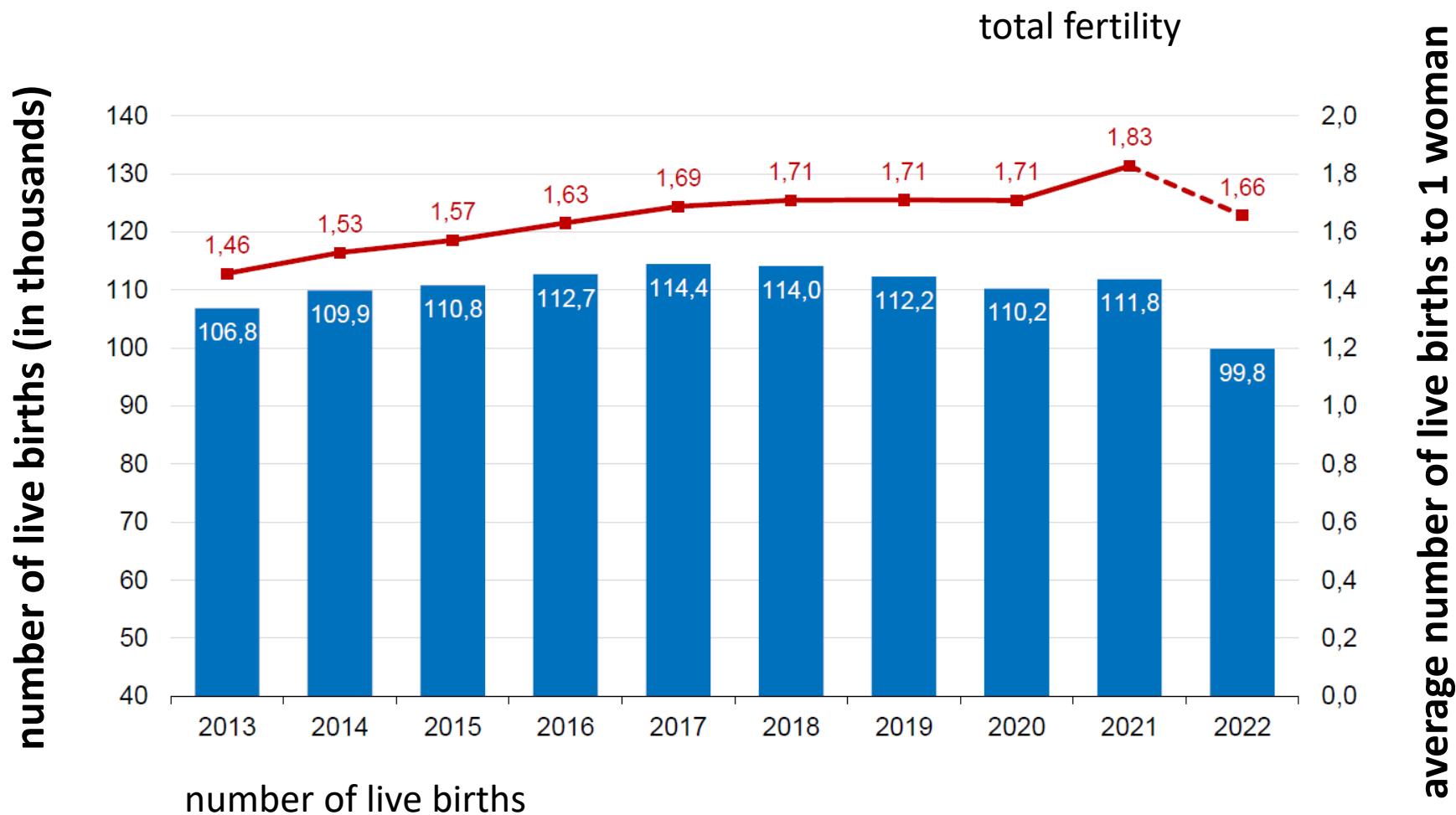
Source: Directorate of Foreign Police Service

Věk Age	Cizinci celkem <i>Foreigners, total</i>	z toho muži <i>Males</i>	z toho ženy <i>Females</i>	Pobyt nad 12 měsíců <i>Residence for 12+ months</i>	z toho muži <i>Males</i>	z toho ženy <i>Females</i>
Celkem / Total	1 113 698	544 239	569 459	1 100 277	537 036	563 241
0-4	48 337	24 708	23 629	48 049	24 563	23 486
5-9	67 451	34 178	33 273	67 025	33 969	33 056
10-14	67 839	33 883	33 956	67 499	33 704	33 795
15-19	70 706	35 080	35 626	67 544	33 454	34 090
20-24	76 687	32 769	43 918	250 117	31 339	42 733
25-29	101 070	48 062	53 008	98 854	46 894	51 960
30-34	119 599	58 227	61 372	118 122	57 392	60 730
35-39	129 173	62 349	66 824	128 343	61 855	66 488
40-44	113 016	54 729	58 287	112 327	54 340	57 987
45-49	96 180	47 054	49 126	95 616	46 743	48 873
50-54	73 468	37 752	35 716	73 075	37 545	35 530
55-59	52 216	27 309	24 907	52 015	27 202	24 813
60-64	41 881	22 673	19 208	41 759	22 605	19 154
65-69	25 696	12 553	13 143	25 647	12 529	13 118
70-74	15 213	6 595	8 618	15 188	6 588	8 600
75-79	7 277	3 223	4 054	7 268	3 221	4 047
80-84	4 262	1 718	2 544	4 253	1 717	2 536
85-89	2 149	823	1 326	2 144	822	1 322
90-94	876	328	548	875	328	547

Annual population growth



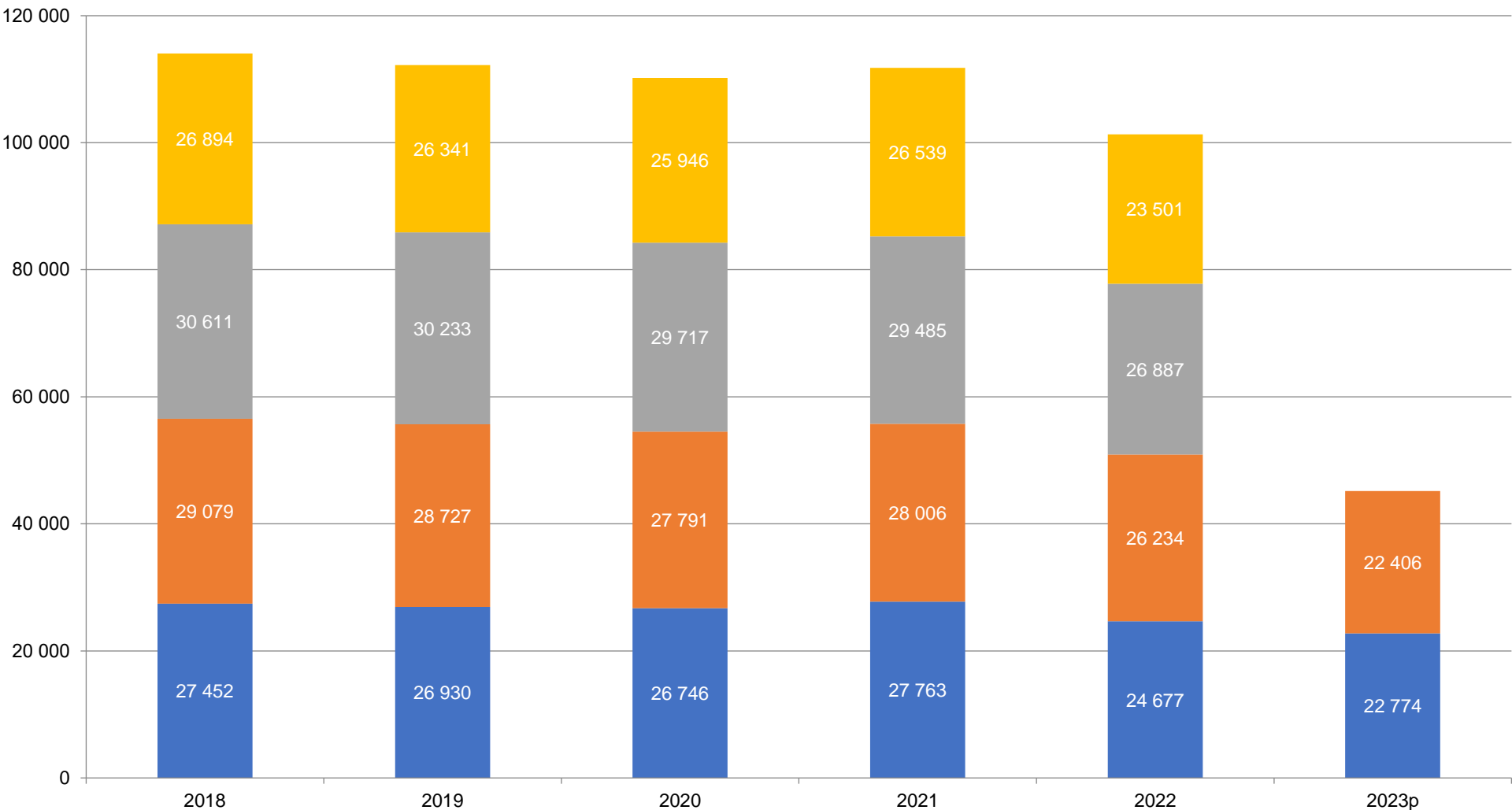
Live births lowest since 2005



Živě narození, čtvrtletní data, 2018–2023

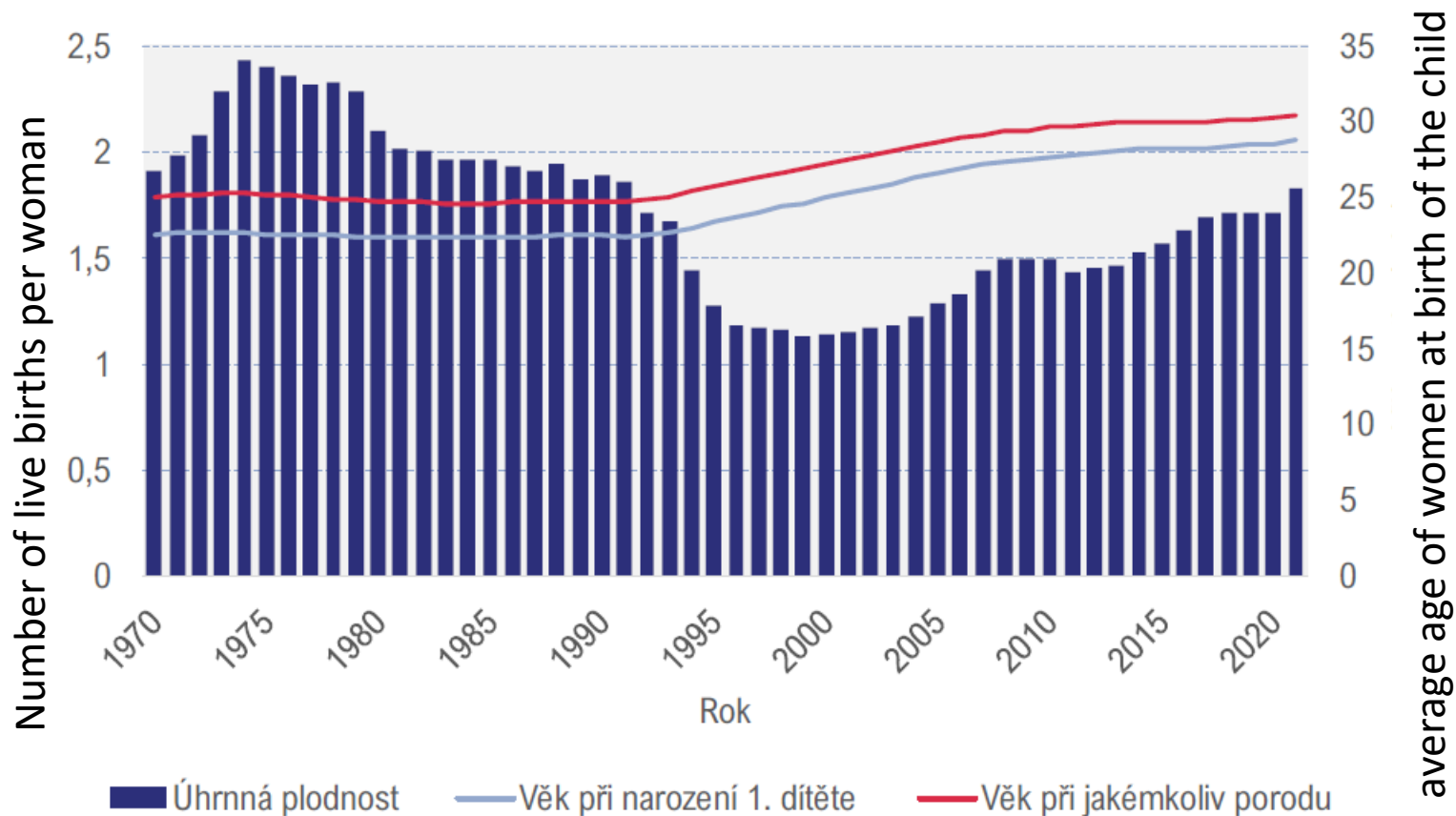
Live births, quarterly data, 2018–2023

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

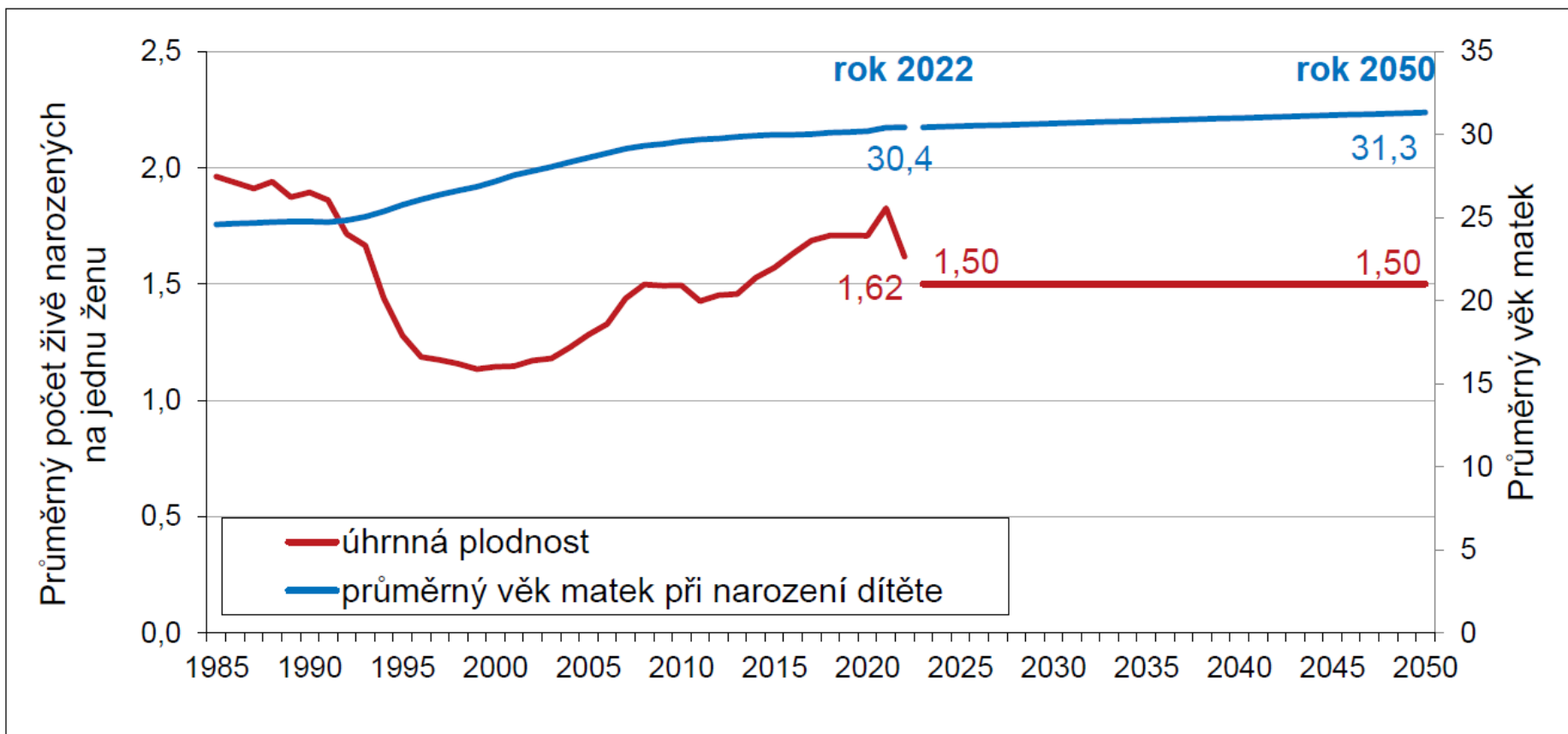


p - přeběžná data / preliminary data

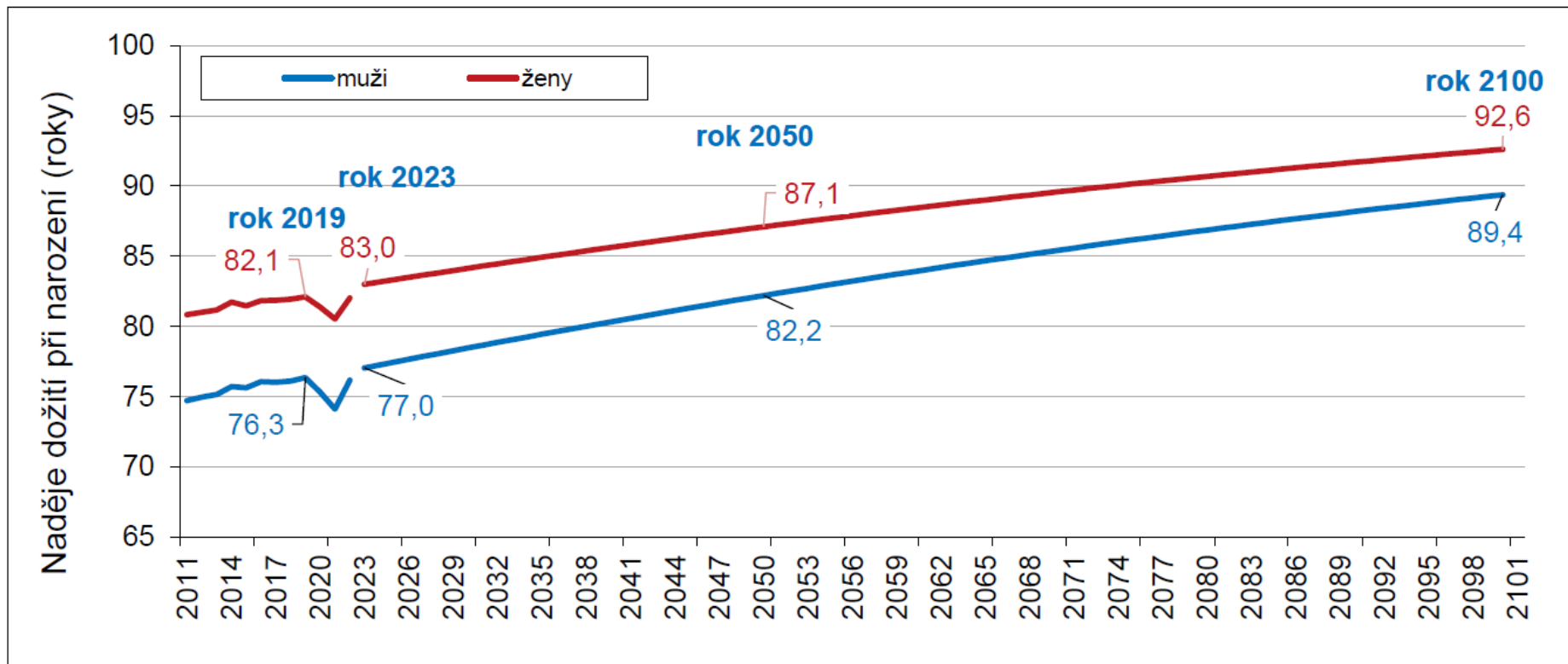
Development of total fertility and average age of mothers at birth



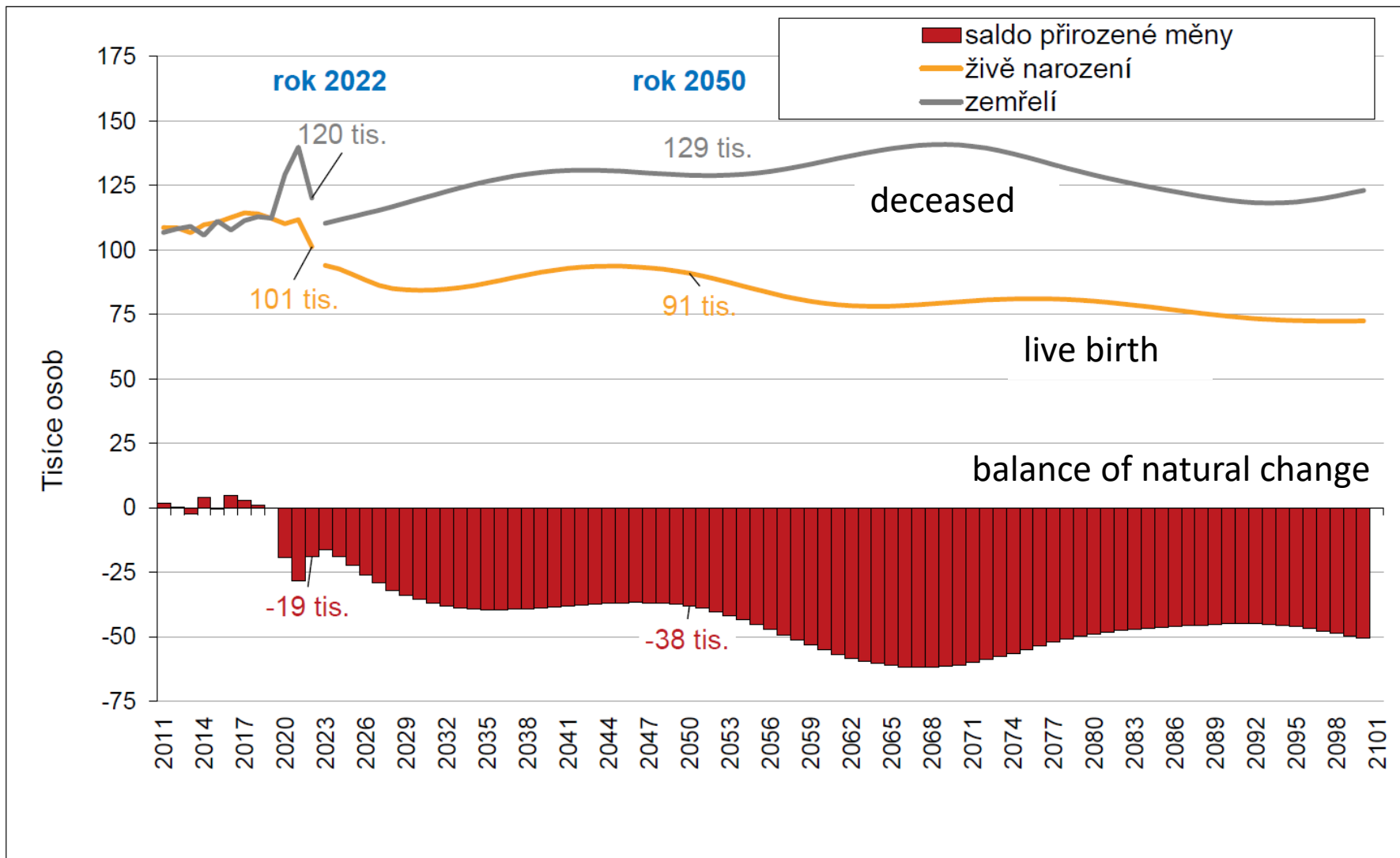
Scenario of fertility development



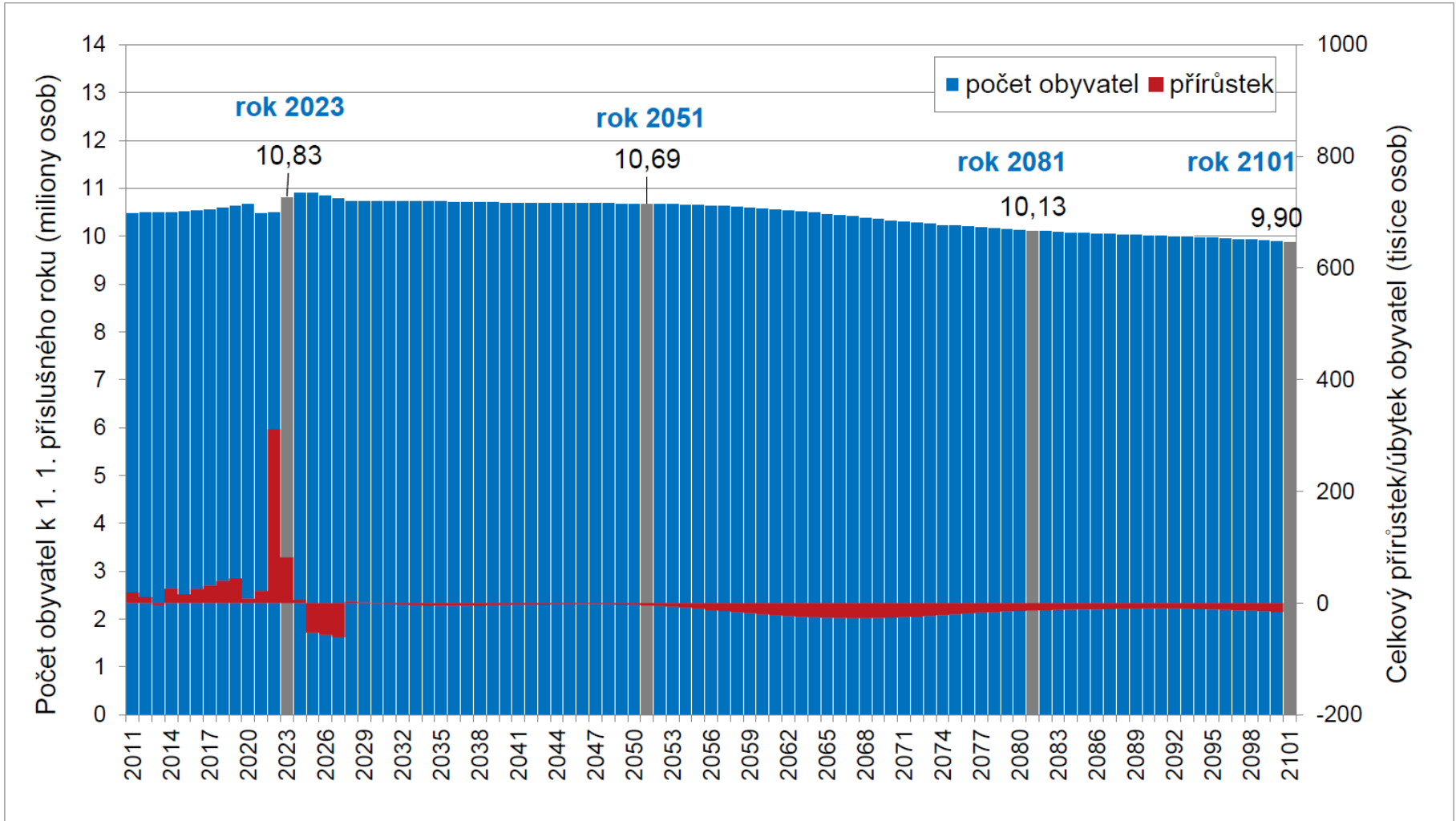
Scenario of mortality development



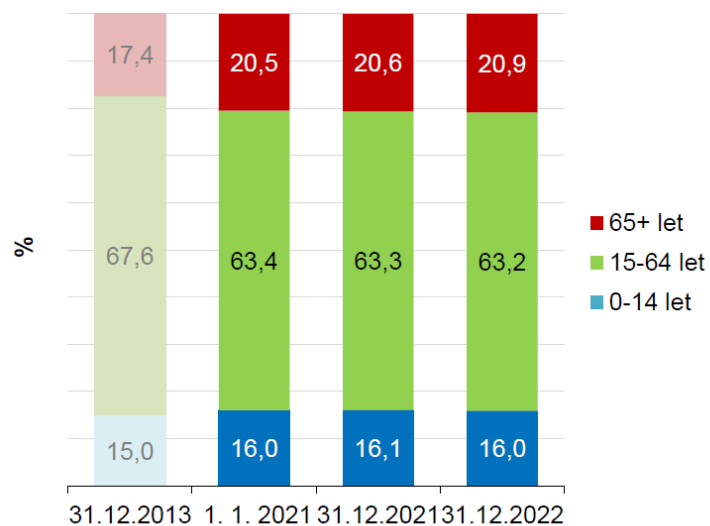
Evolution of natural change



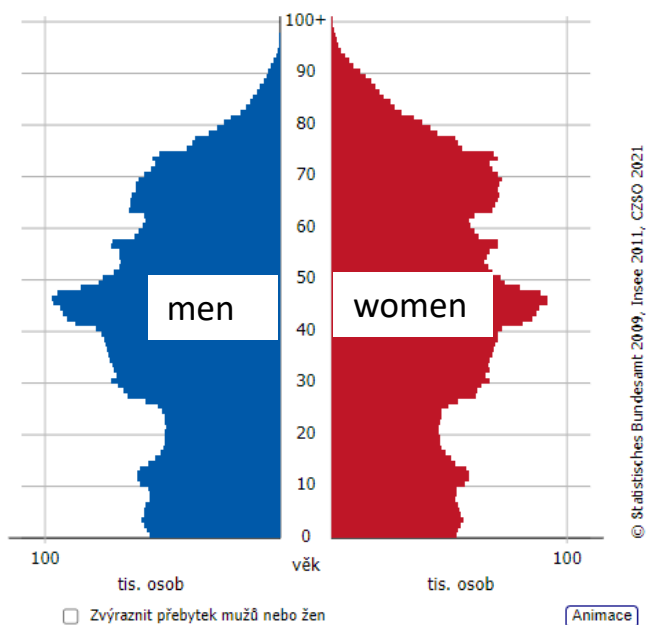
Total population and annual growth prospects



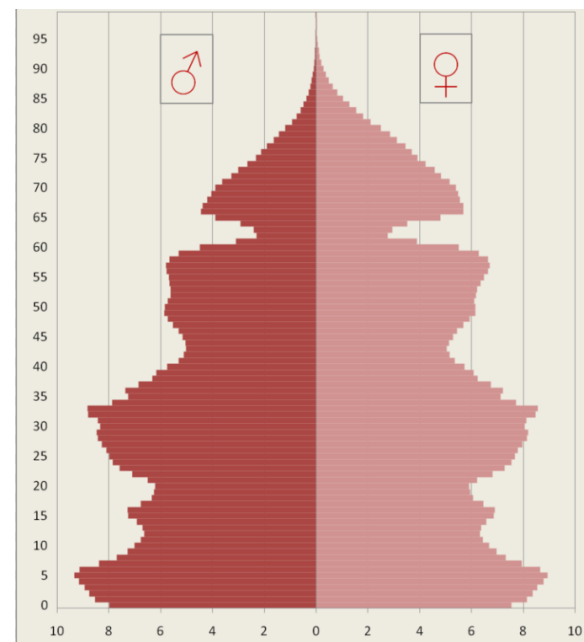
Population by age groups



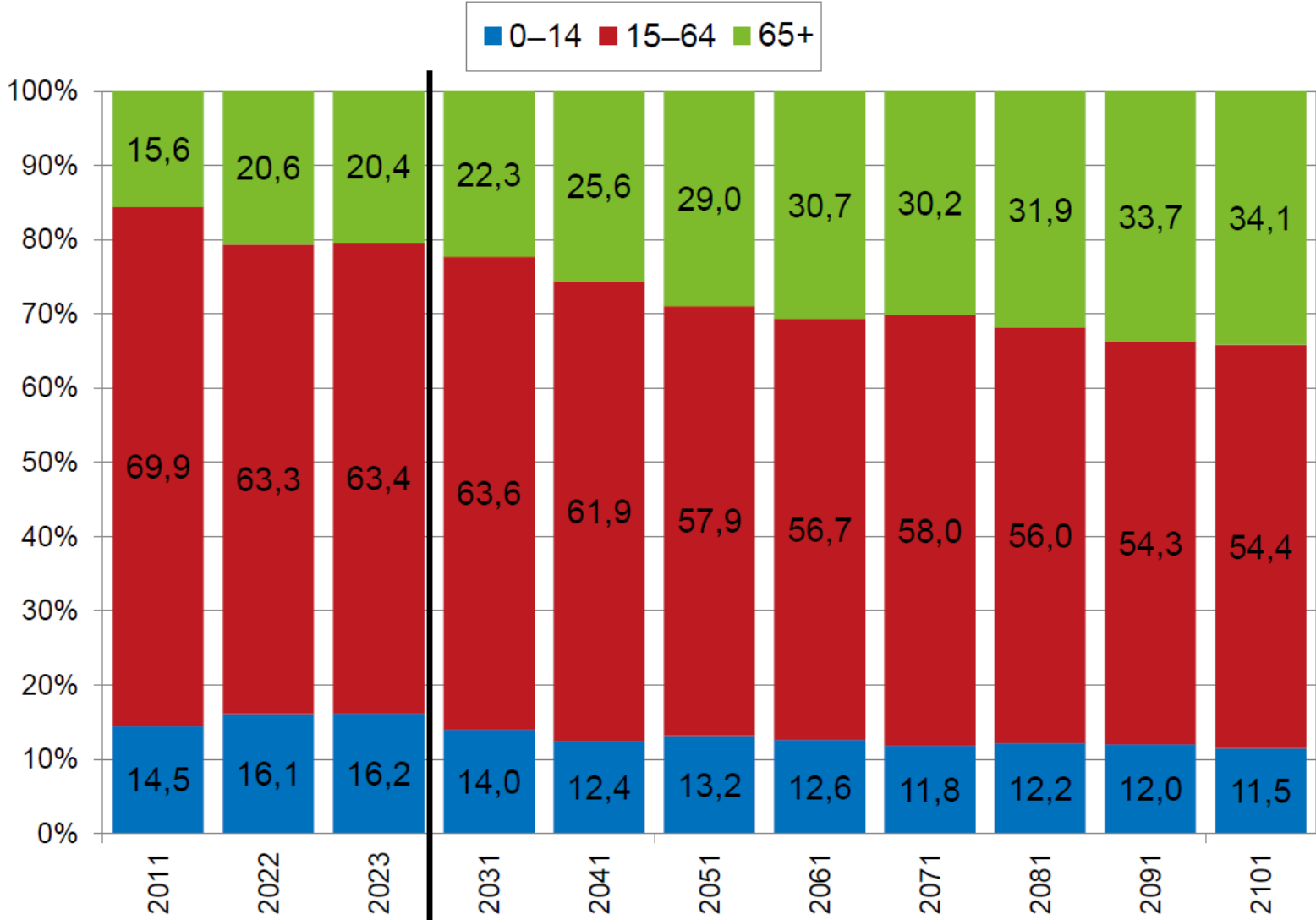
Age pyramid, Czechia, 2021



Age pyramid, Czechia, 1980



Population in the main age groups outlook



Infant mortality

1888

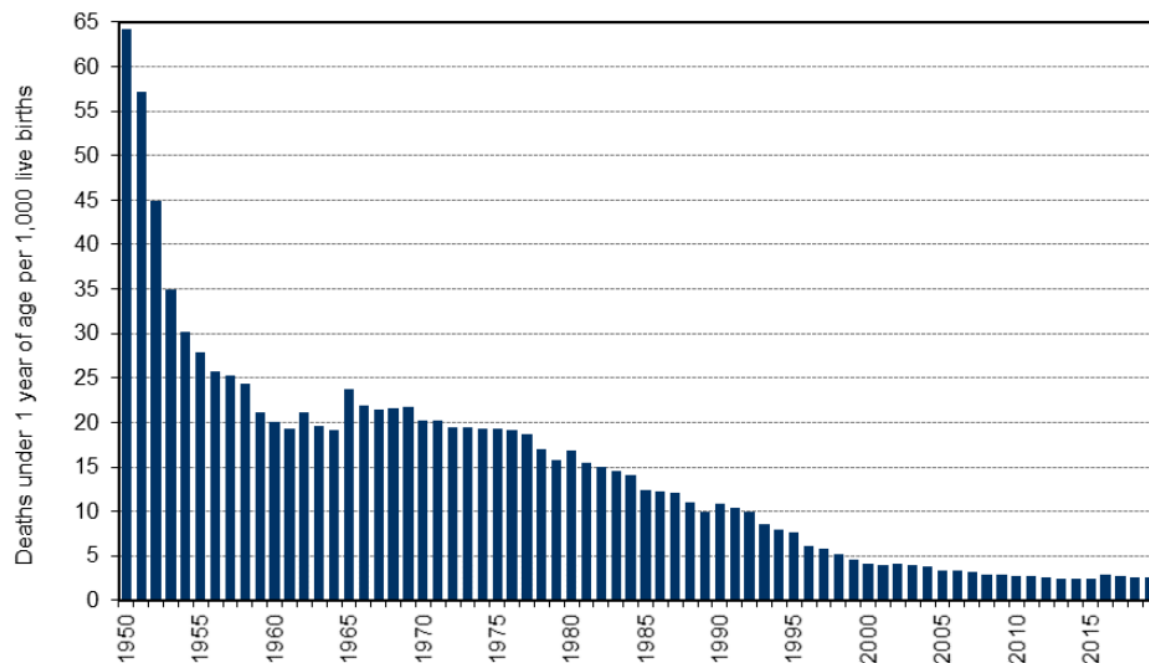
Infant mortality rate 330 promile

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

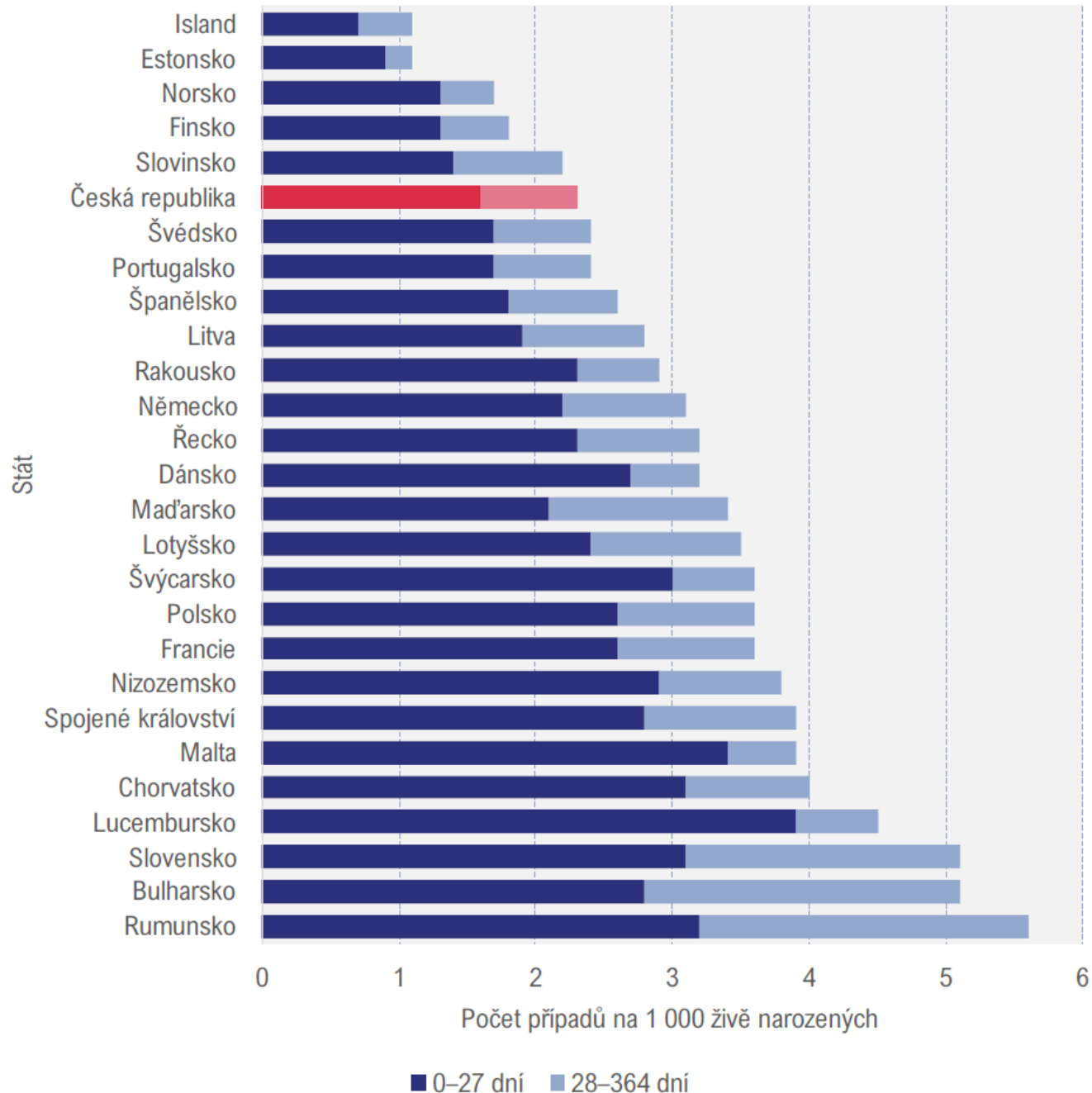
Infant mortality rate, 1950-2019



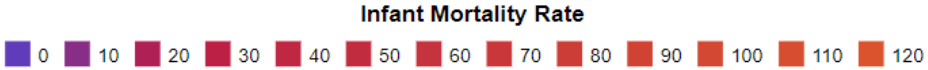
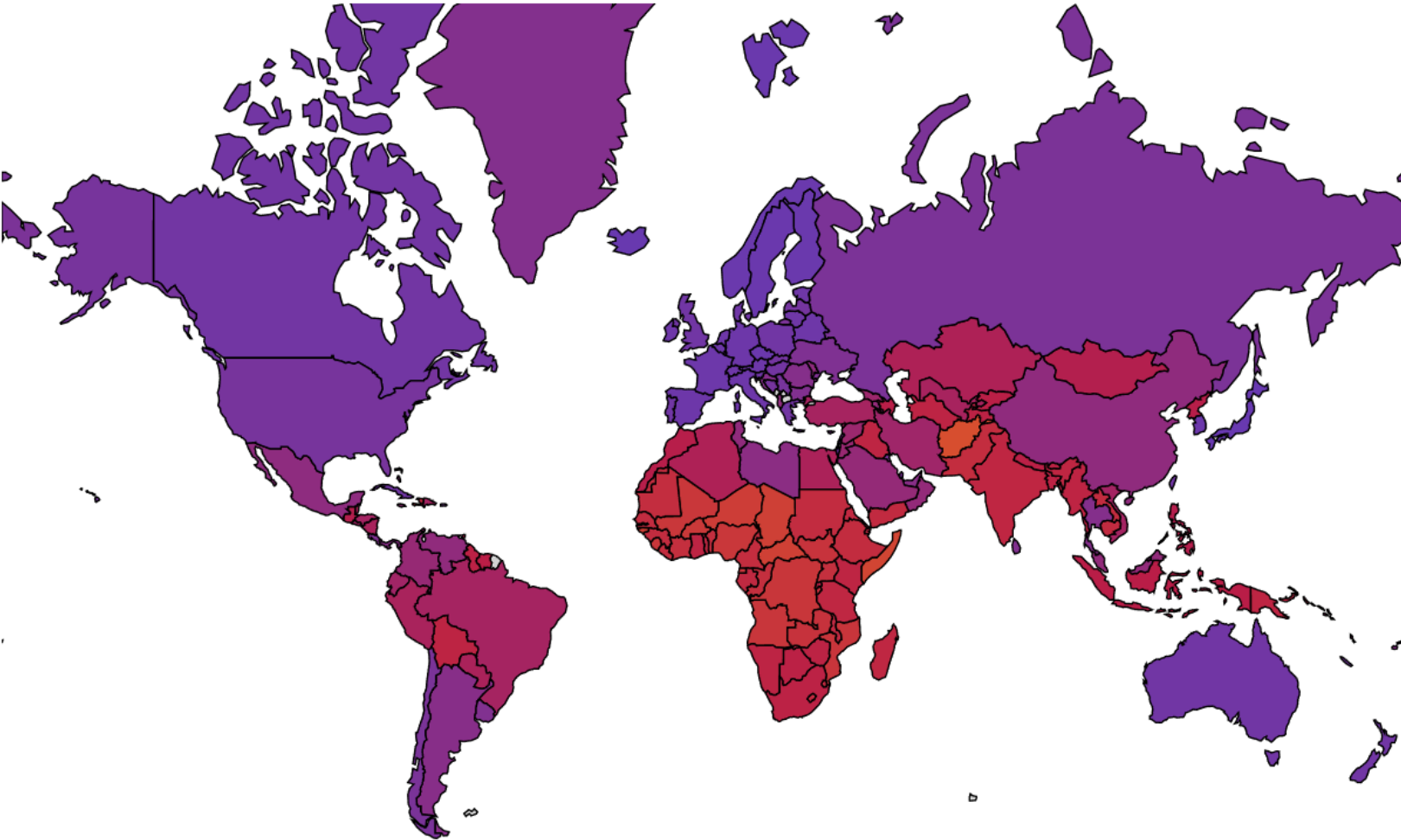
2021

Infant mortality rate 2.5 promile

Infant mortality EU

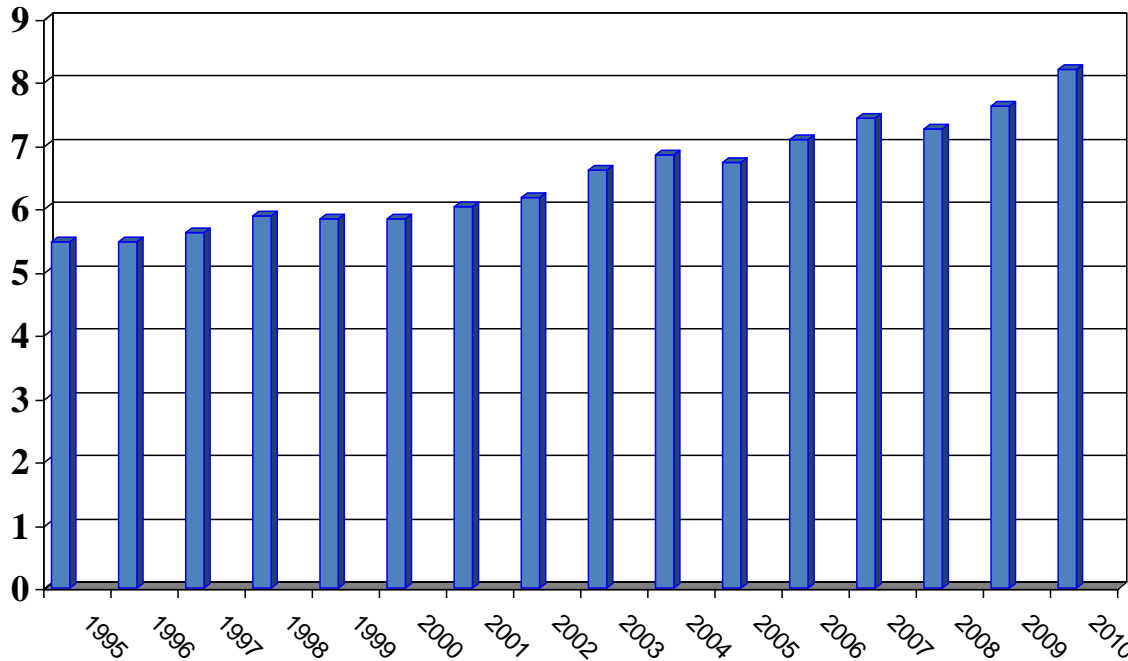


Infant Mortality Rate by Country 2022

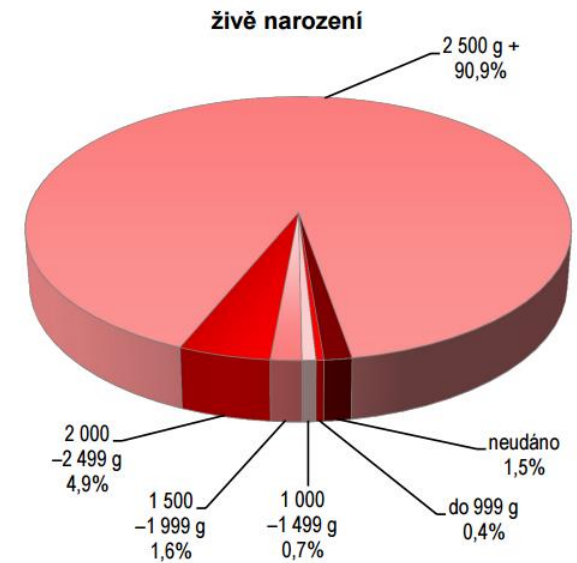


Prematurity rate

Birth weight < 2.5kg (8.5%)

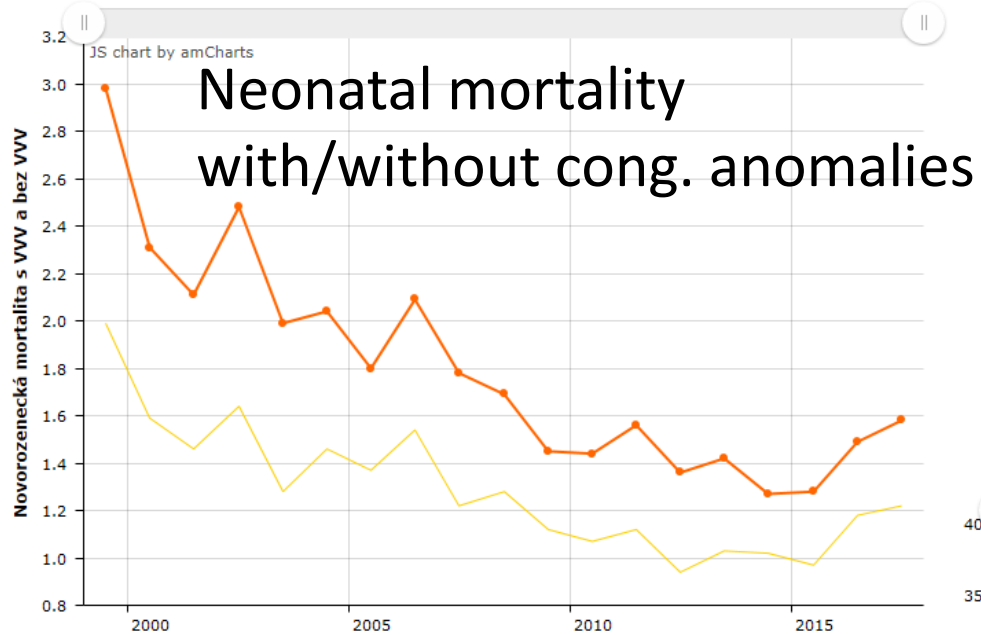


3. Struktura narozených podle porodní hmotnosti - živě narození a mrtvě narození

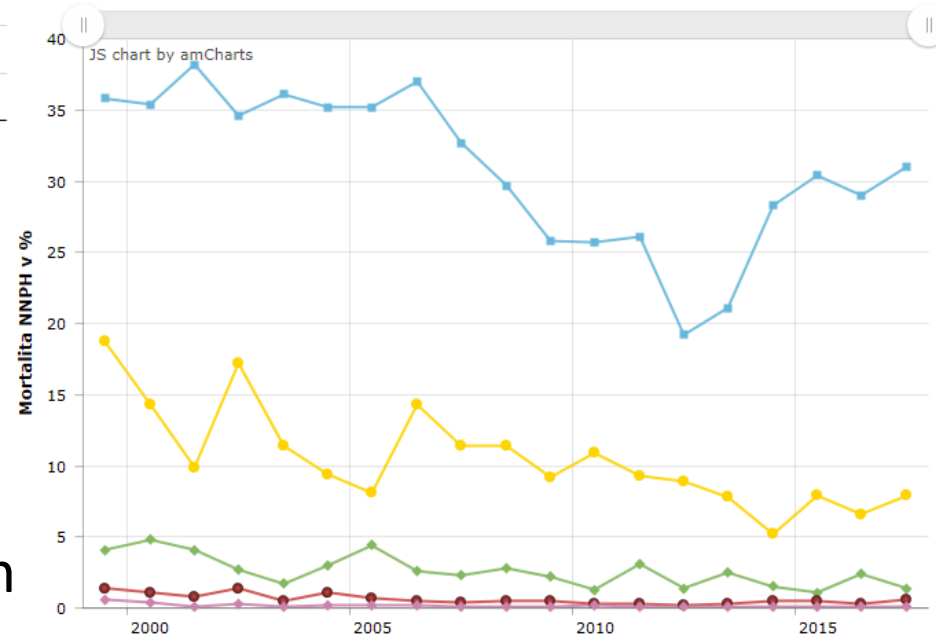


Birth weight < 1.5kg (2.7%)

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

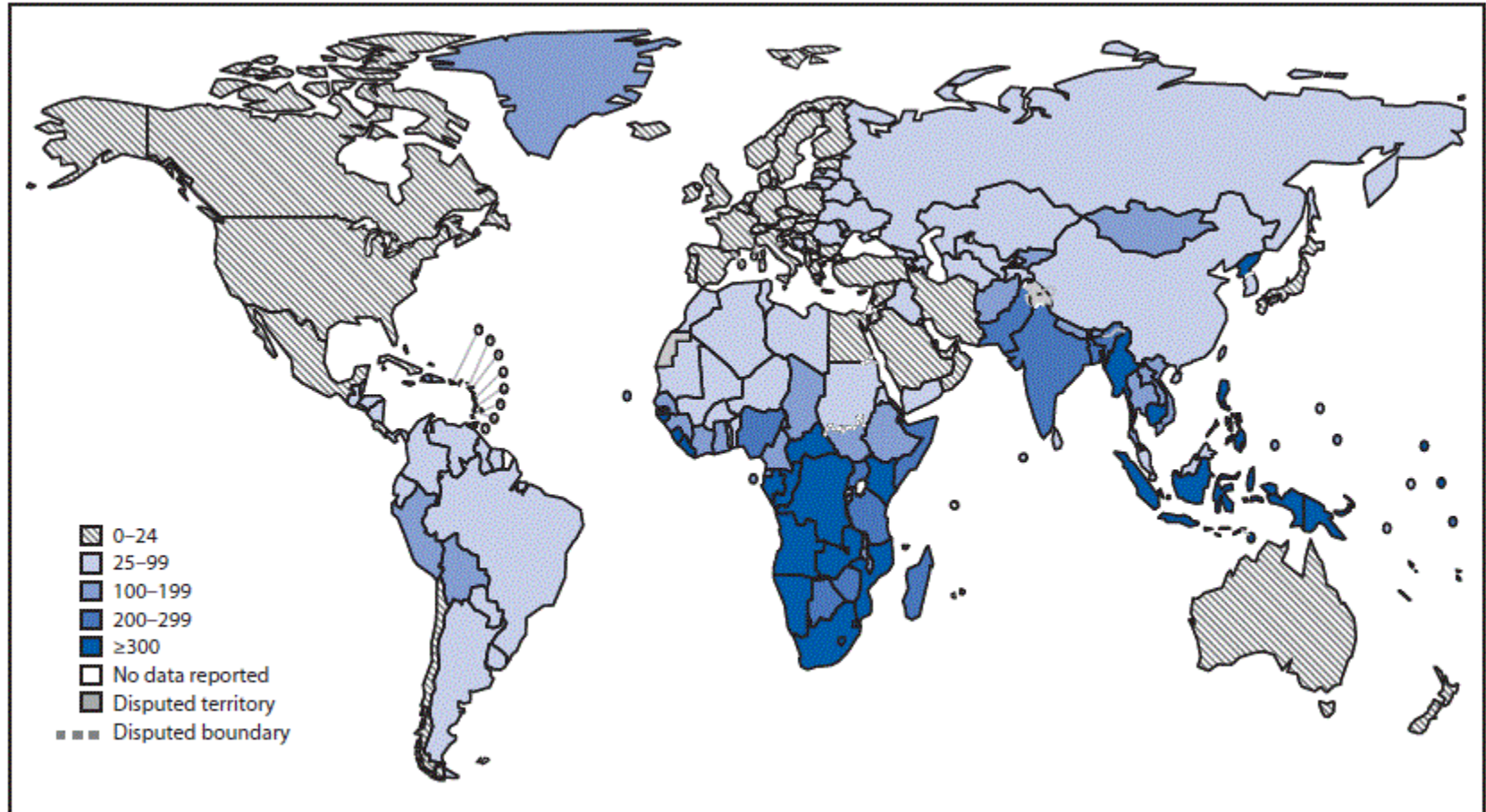
¶polysaccharide capsule conjugated with protein carrier

£live-attenuated

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

All children in the Czech Republic should be vaccinated against 11 (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