Congenital Malformations in the Czech Republic in 1984 – 2002 and Incidences Estimation until 2015

Horacek, J.[1,2], Sipek, A. [3,4], Gregor, V. [1,2], Masatova, D.[5], Svetnicova, K.[2]

[1] Postgraduate Medical Institute, Chair of Medical Genetics, Prague
[2] Thomayer´s University Hospital, Dept of Medical Genetics, Prague
[3] Institute for Care of Mother and Child, Prague
[4] Postgraduate Medical Institute, Chair of Gynaecology and Obstetrics, Prague
[5] Institute of Health Information and Statistics, Prague

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Objective:

Retrospective analysis of congenital malformation (CM) incidences (both totally and in selected types) in 1984 – 2002 period and an estimation of their prospective values until 2015 in the area of the Czech Republic.

Design:

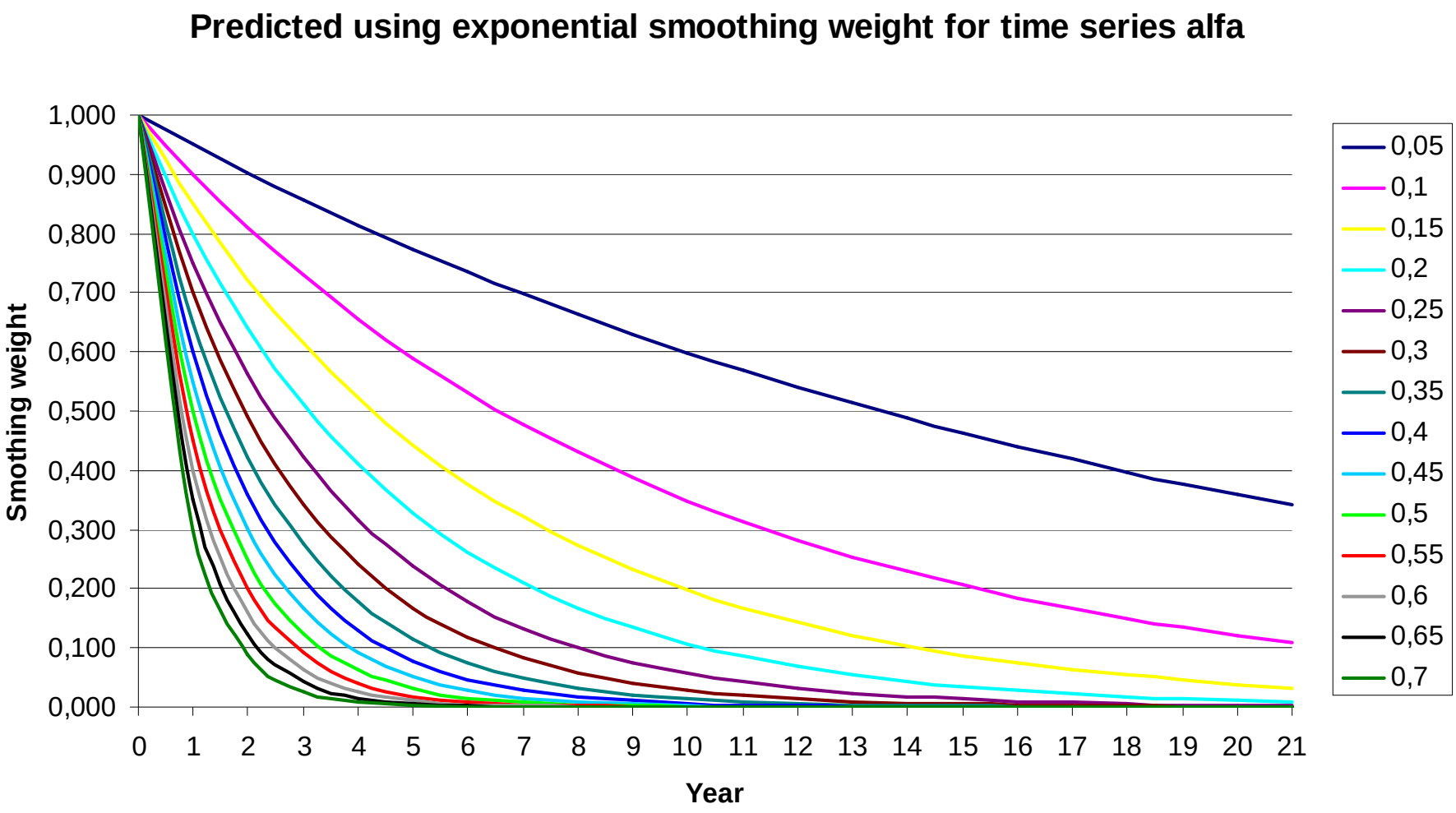
A retrospective demographical – epidemiological study with a prospective mathematical - statistical estimation.

Participants:

Data on congenital malformations in the Czech Republic from the Institute of Health Information and Statistics - National Register of Congenital Anomalies and from the Institute for Care of Mother and Child. Data on births from the Czech Statistical Office.

Statistics:

Numbers of birth defects per 10 000 live births were predicted using exponential smoothing for time series with smoothing weight 0,2 without trend or with a linear trend component, where suitable. Exponential smoothing forecasts future observations as weighted averages of previous observations..


Predicted using exponential smoothing weight for time series alfa
Smothing weight
1,000
0,900
0,800
0,700
0,600
0,500
0,400
0,300
0,200
0,100
0,000
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
Year
0,05
0,1
0,15
0,2
0,25
0,3
0,35
0,4
0,45
0,5
0,55
0,6
0,65
0,7

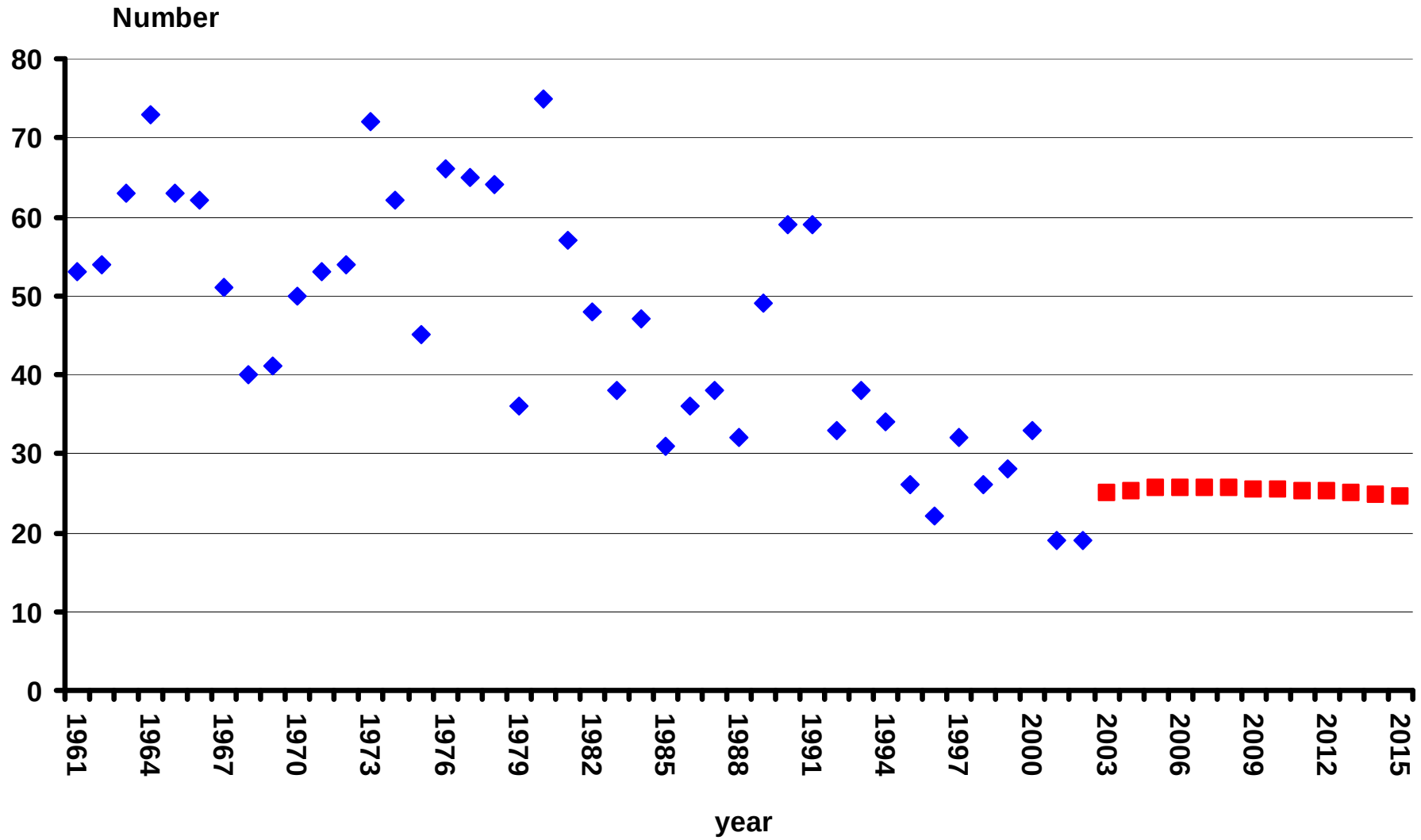
Main outcome measures & Results:

A time series analysis of total congenital malformations and of selected types in the period under the study was used. Besides the total number of CM, following types were selected: anencephaly, spina bifida, omfalocele, gastroschisis, cystic kidney, renal agenesis/hypoplasia and Down syndrome.

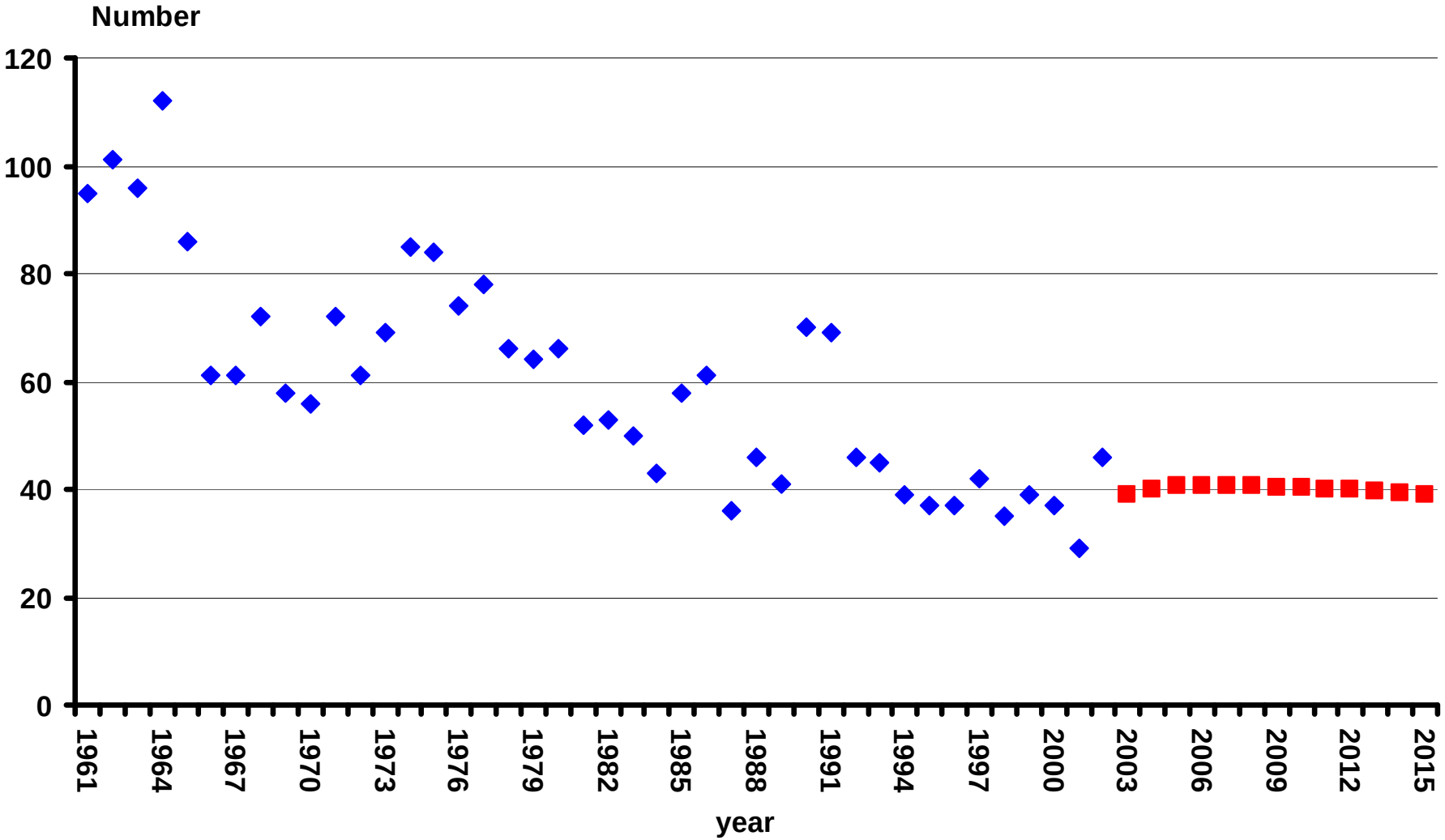
According to the statistical estimation, 1 244 767 children should be born in the 2003 – 2015 period.

In the same period, 50 706 - 67 628 CM cases should be diagnosed both pre- and postnatally.

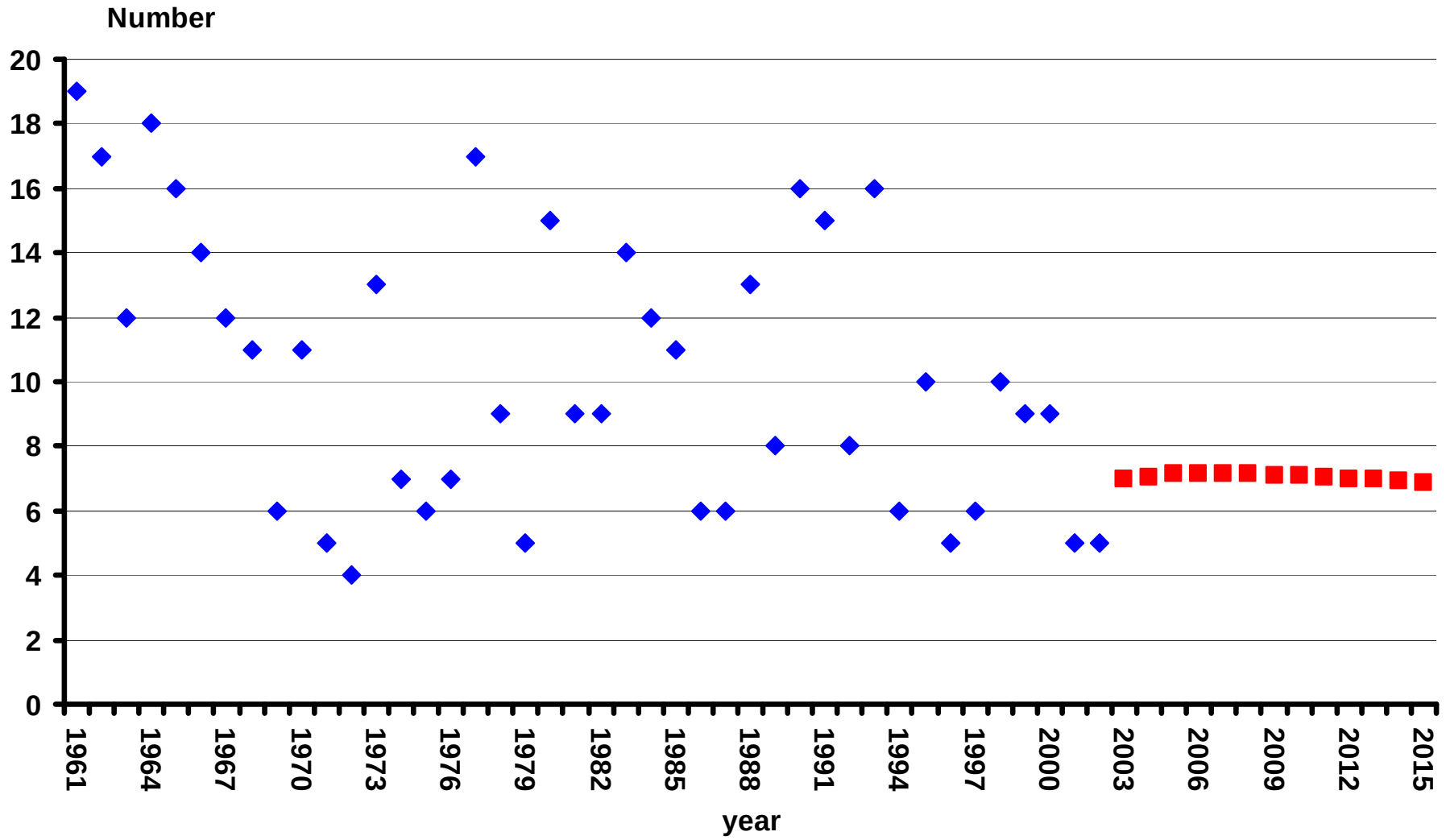
Anencephaly



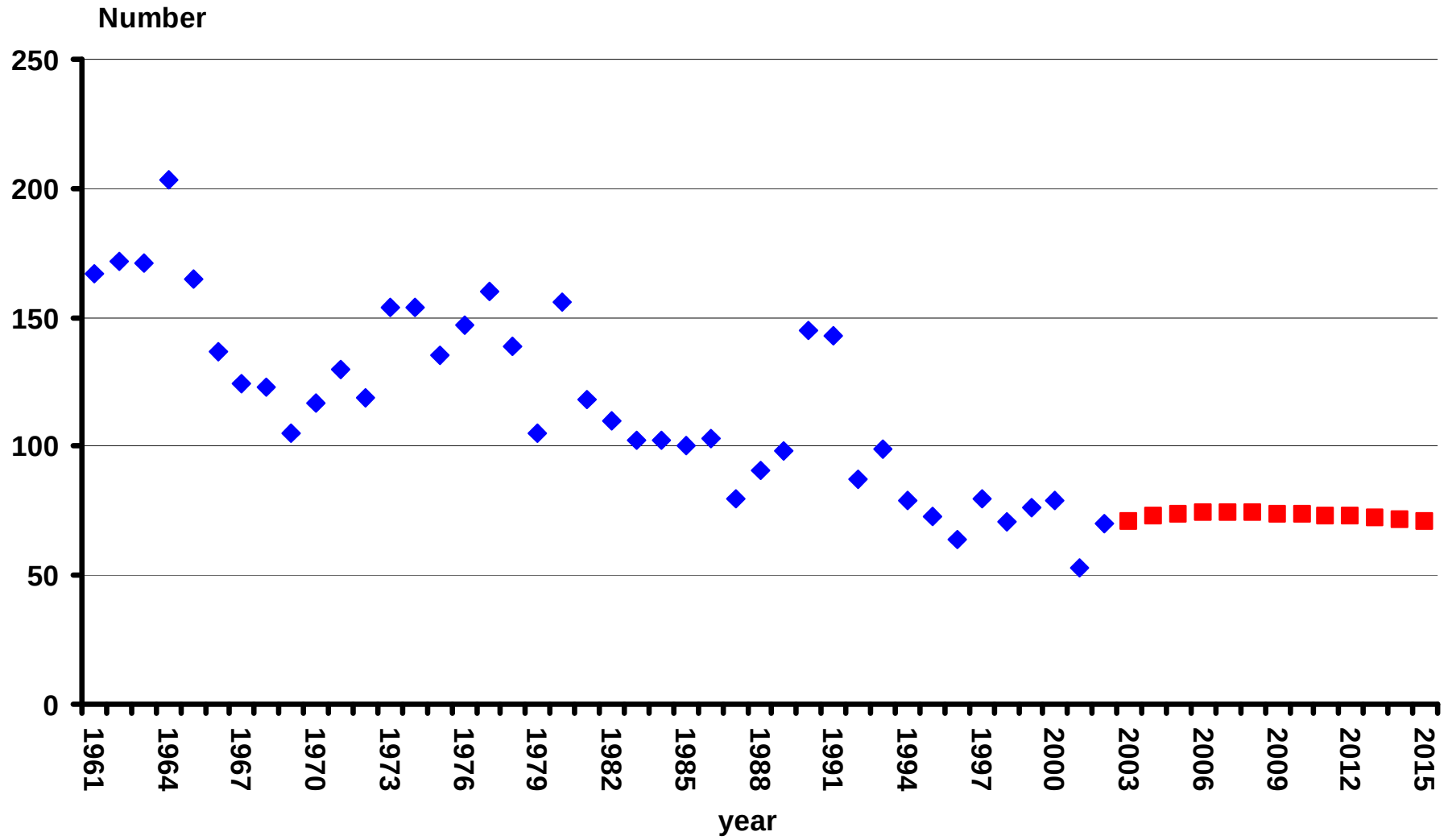
Spina bifida



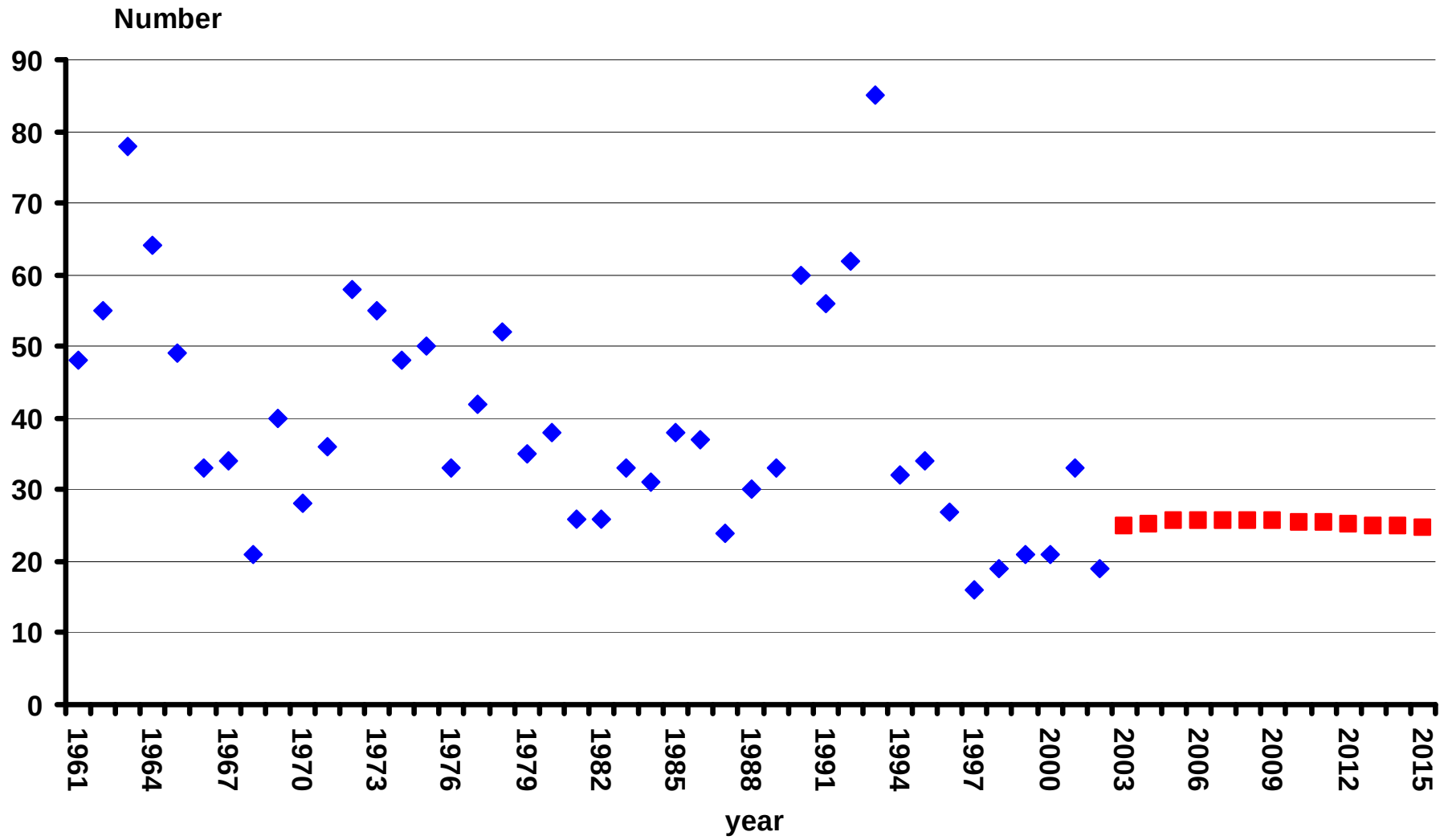
Encephalocele



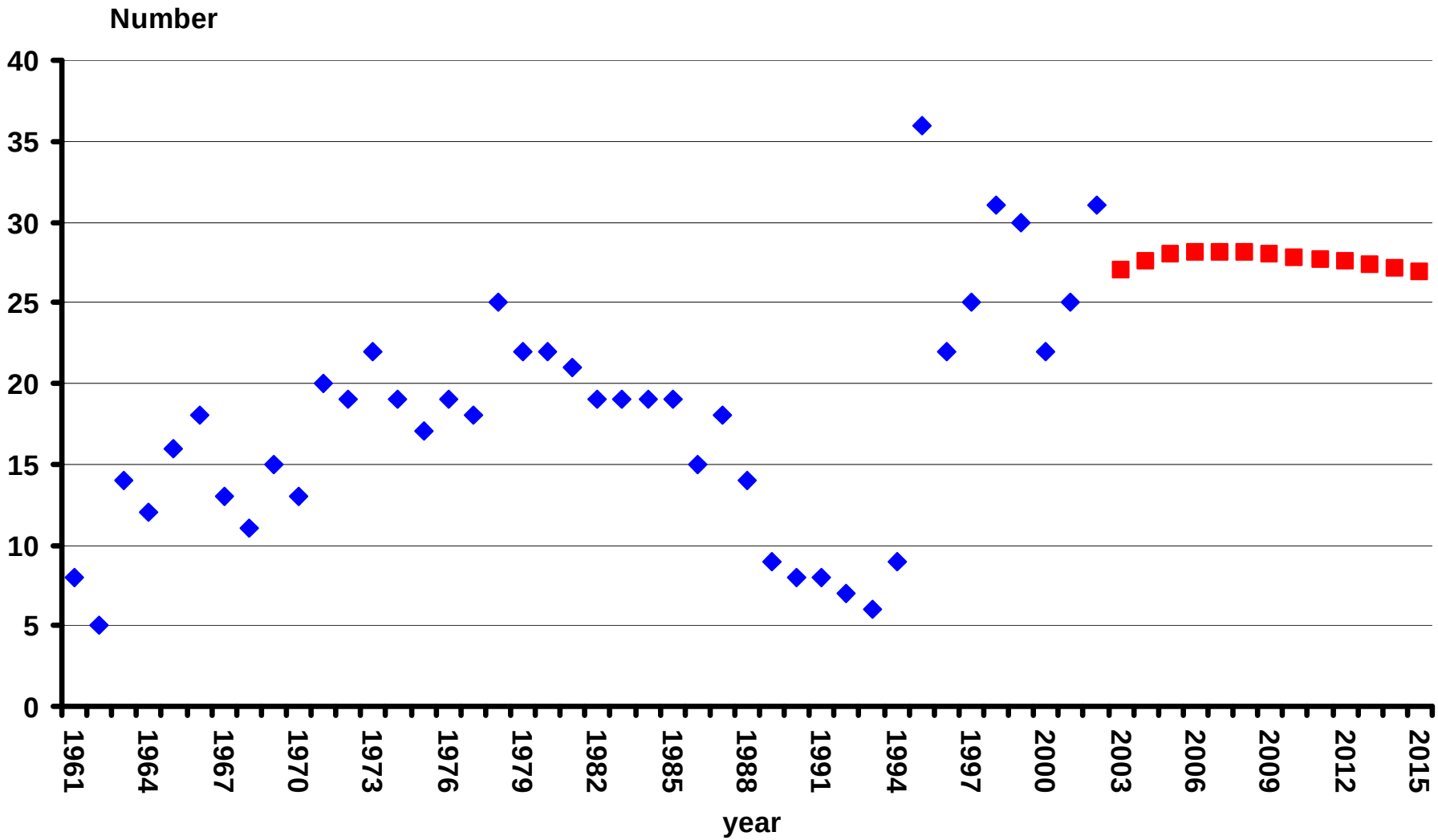
Neural Tube Defects



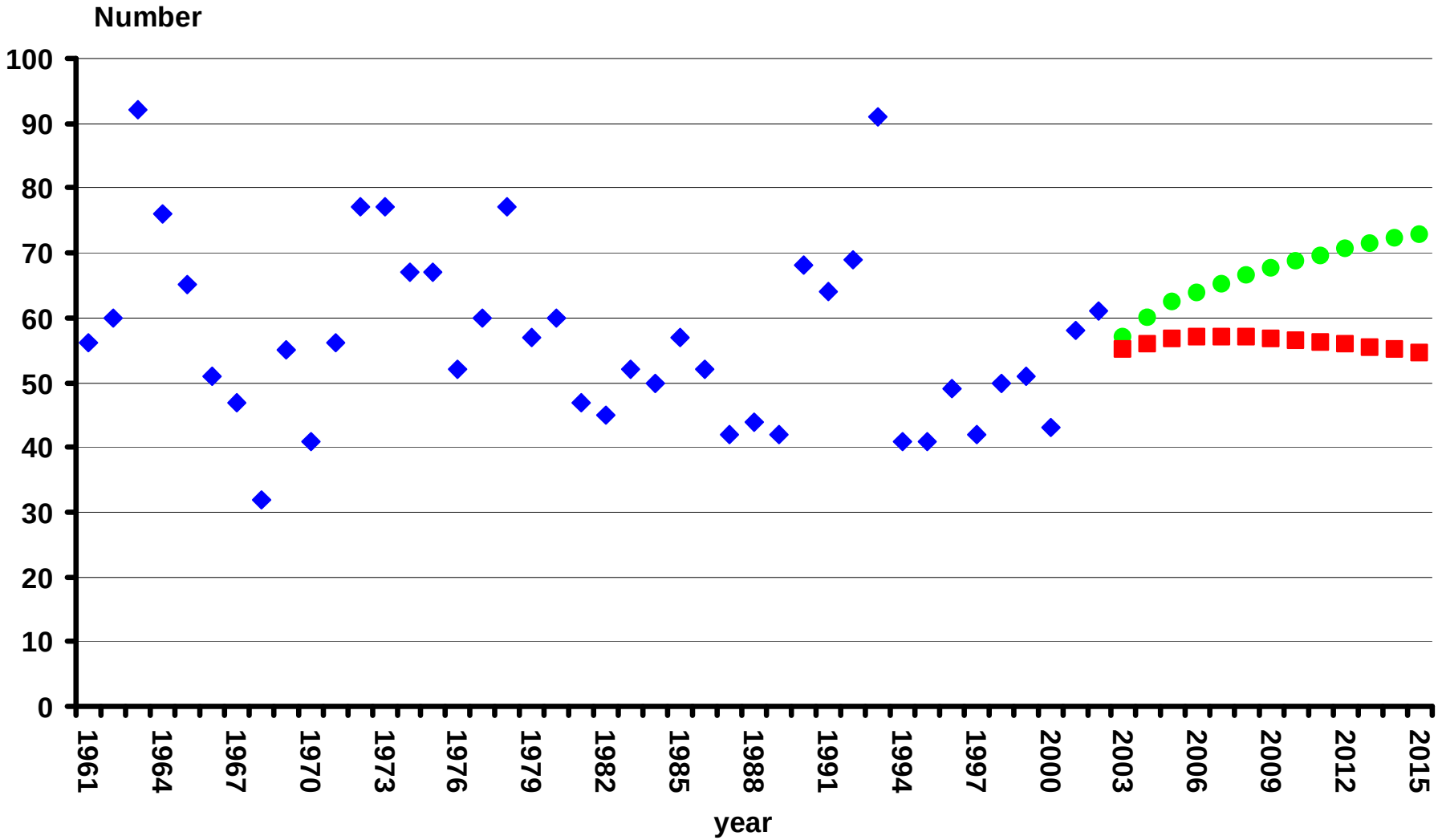
Omphalocele



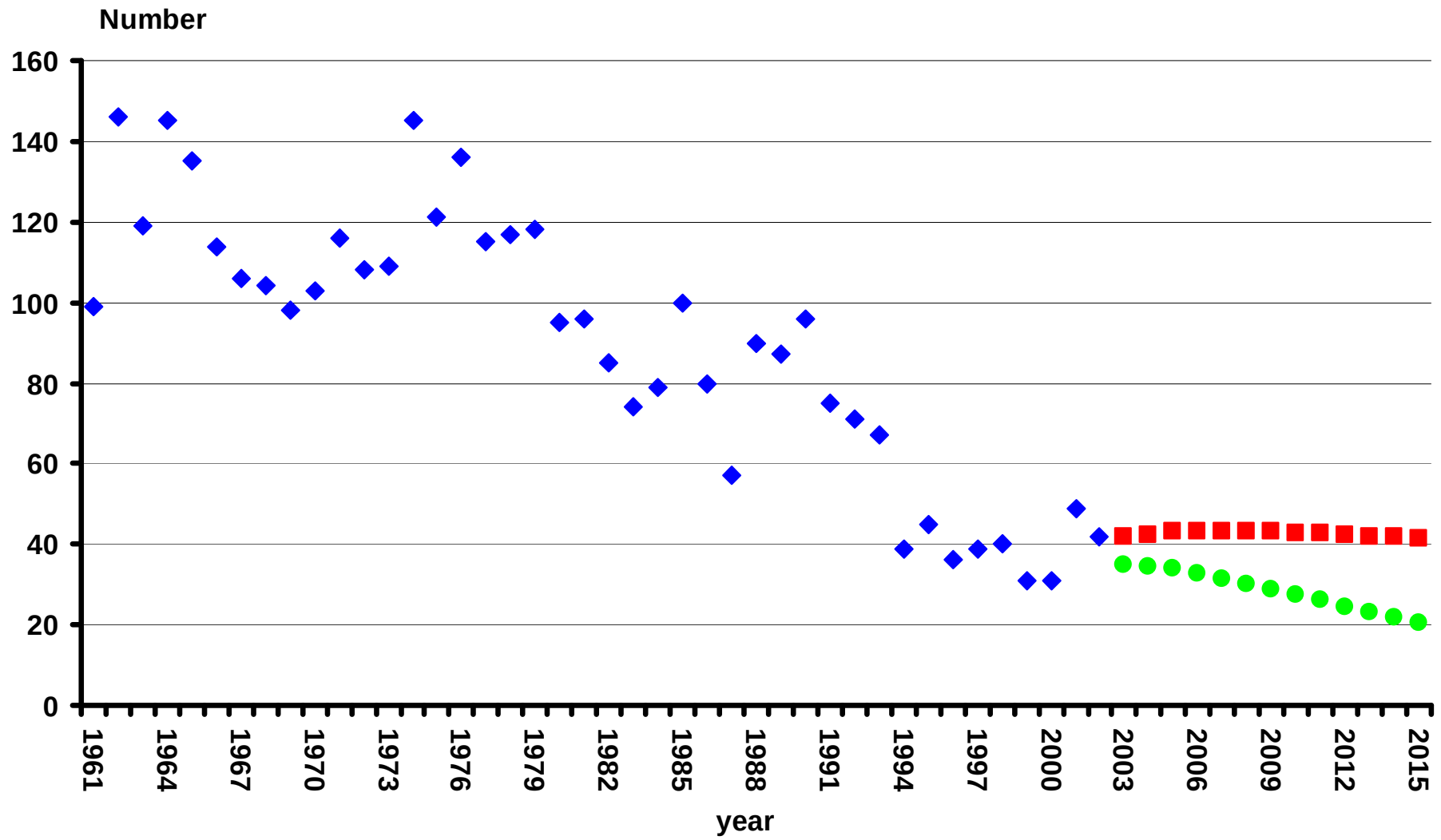
Gastroschisis



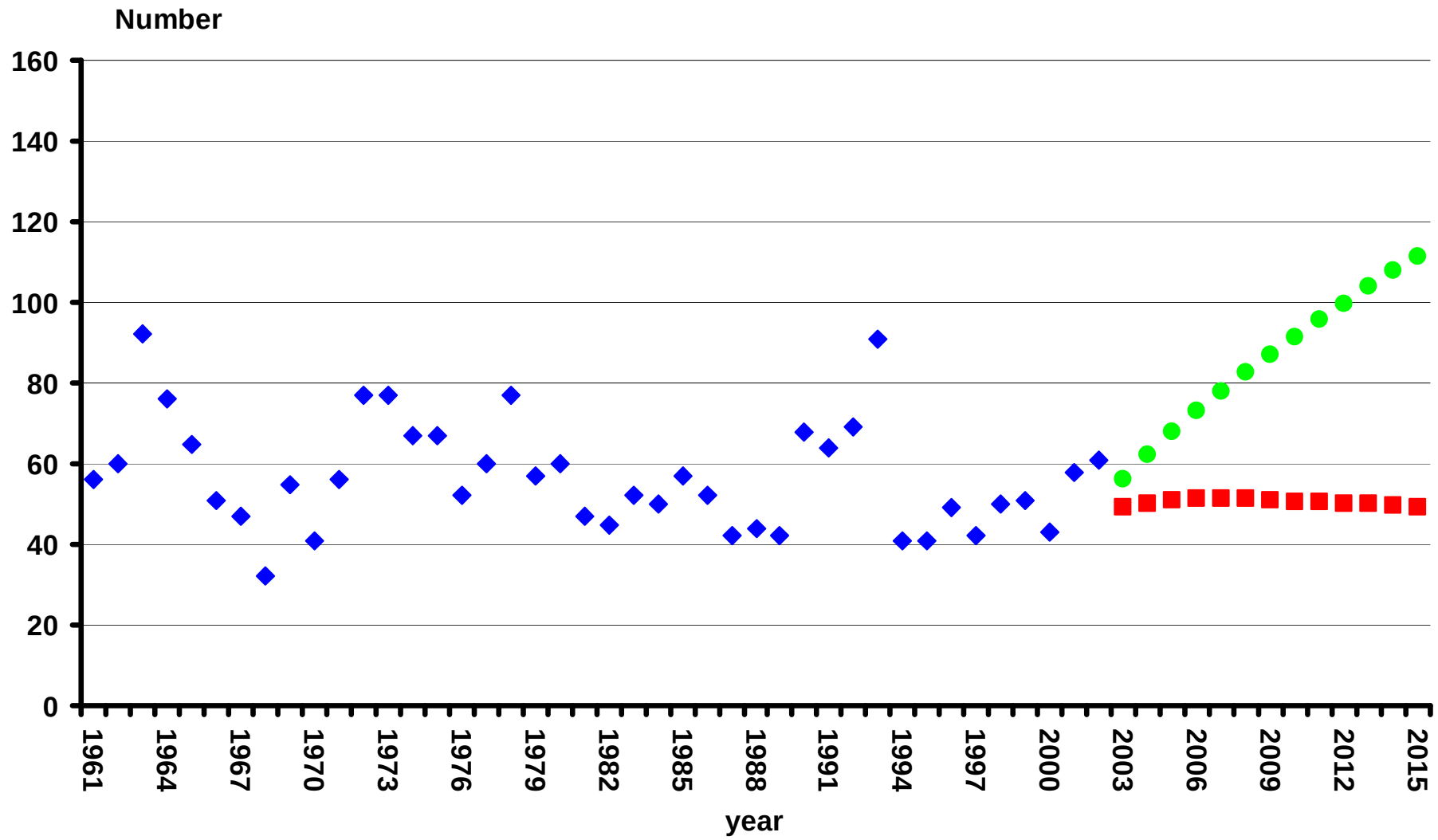
Abdominal Wall Defects



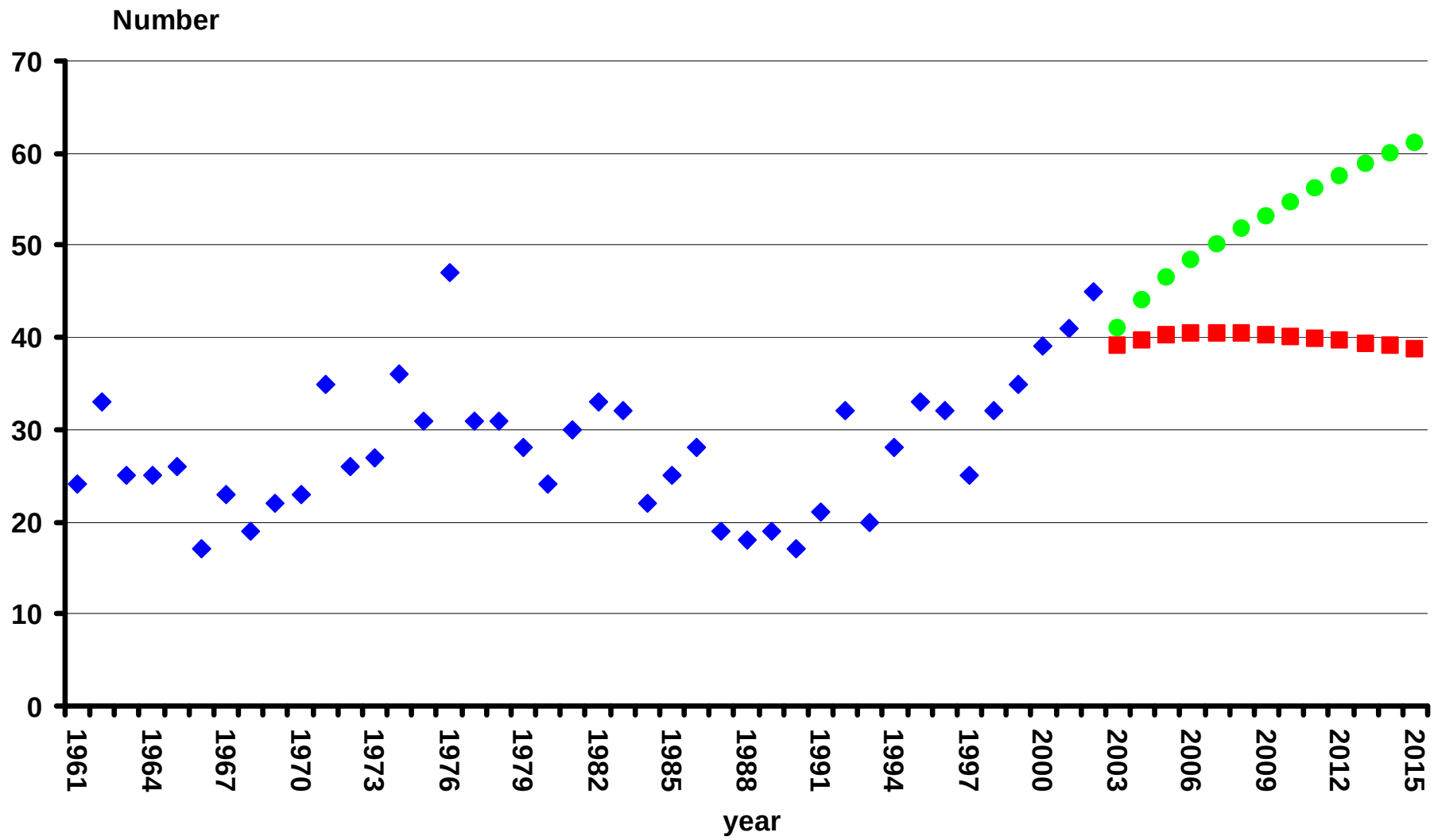
Congenital Hydrocephaly



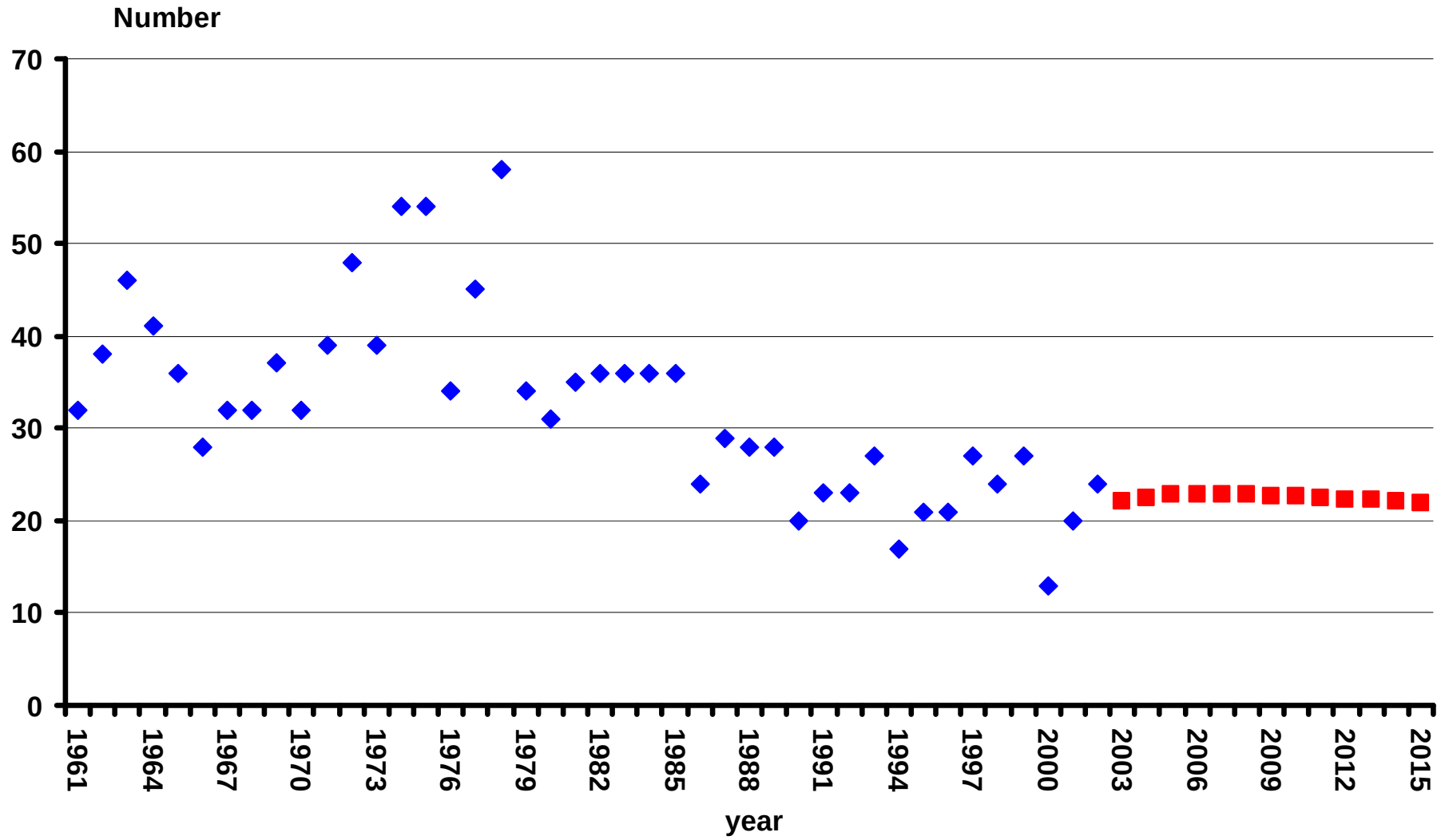
Cystic Kidney



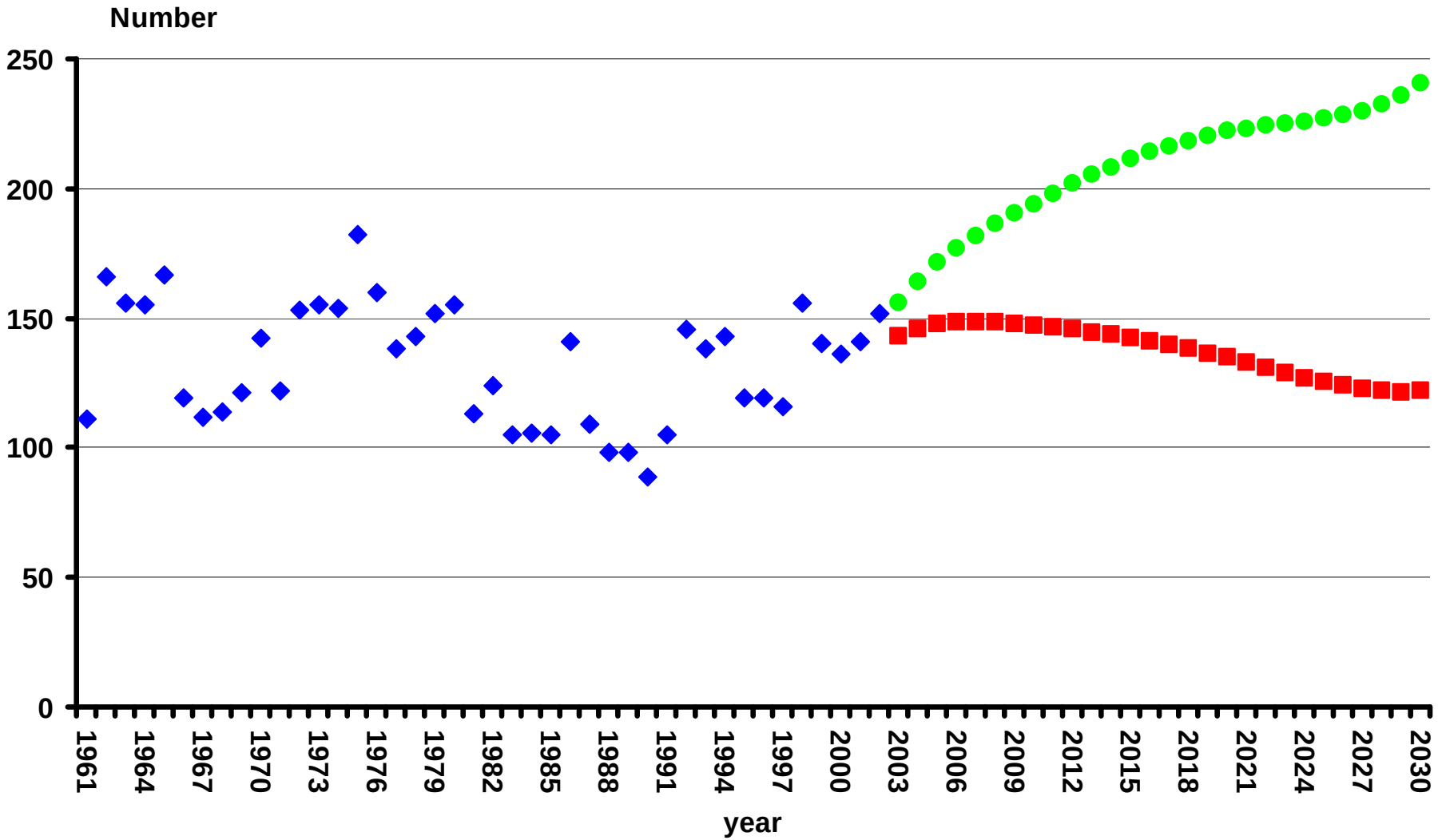
Renal Agenesis / Hypoplasia



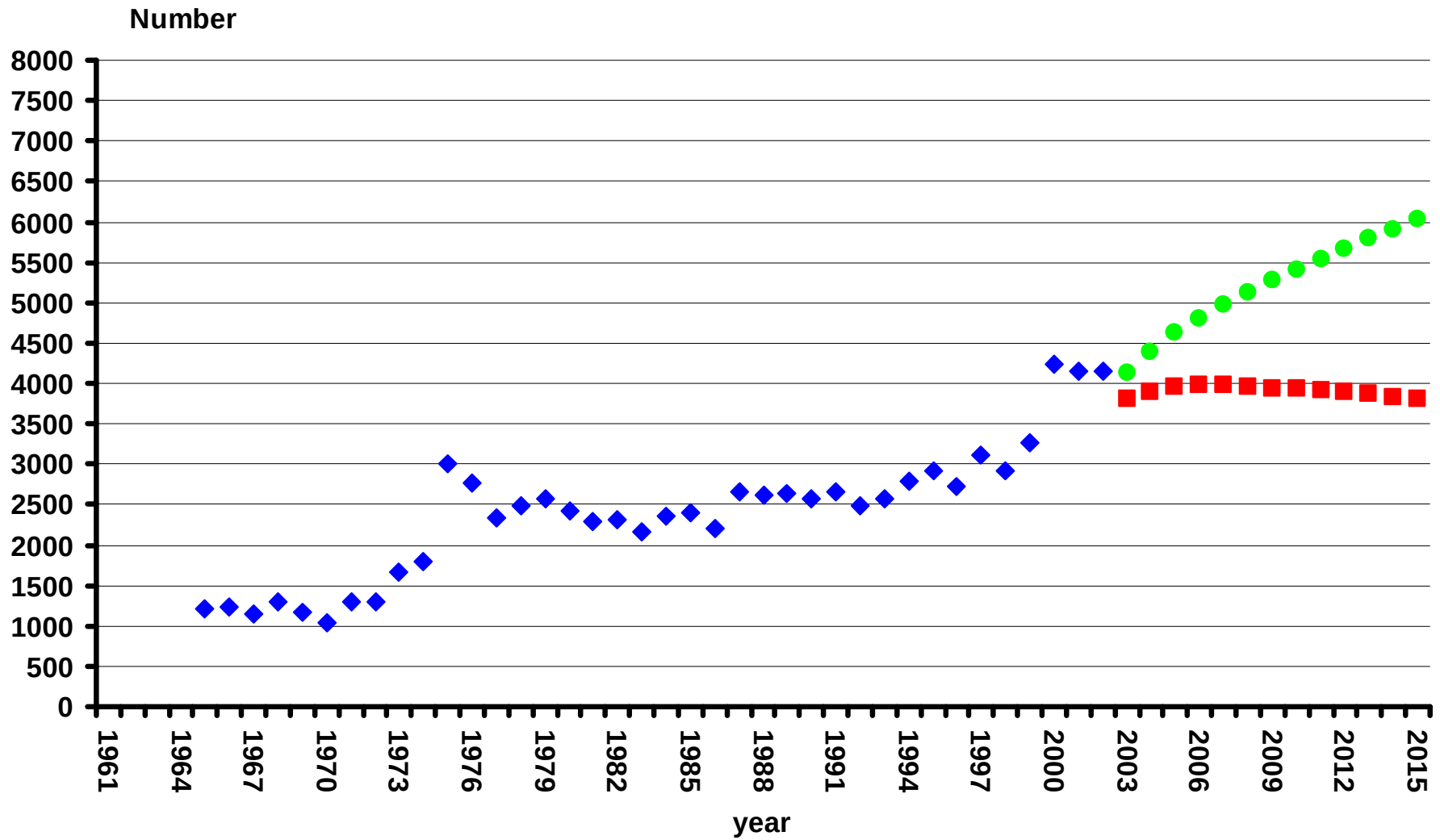
Diaphragmatic Hernia



Down Syndrome



All Birth Defects

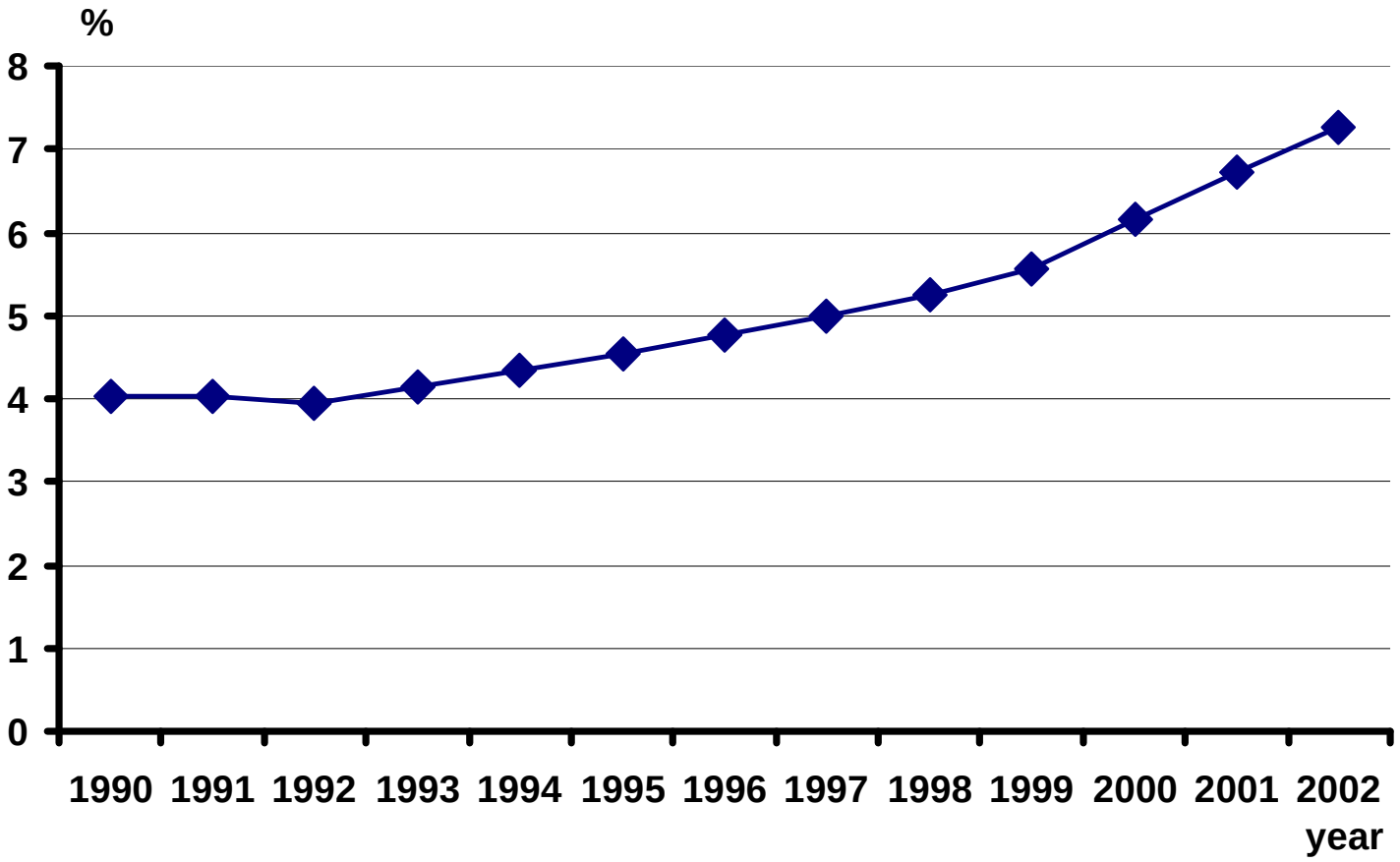


Conclusion:

Estimation of CM numbers in the 2003 – 2015 period does not really take into account changes in the amount and a quality of diagnostic processes. Their development will be probably the principal factor (much harder to estimate than demographical processes) in influencing the CM numbers in the future.

The study was supported by MZOL project # 34 000 000 1

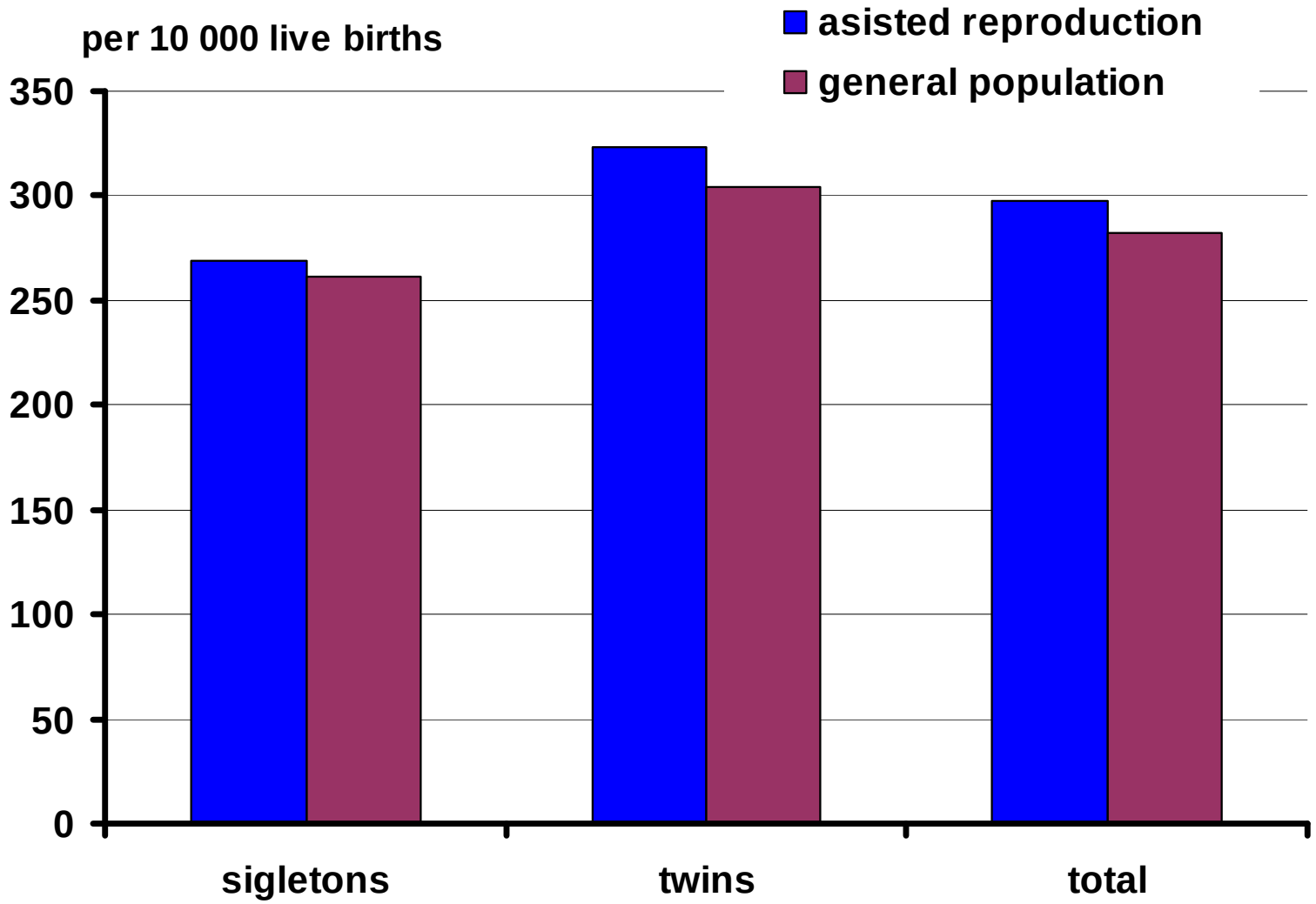
Procento matek nad 35 let věku



Týden těhotenství při narození dětí:

Vybrané VV	do 28. t.t	28.-37. t.t.	38.-43. t.t.
1994	0,52 %	18,86 %	80,45 %
2002	0,73 %	23,40 %	75,51 %
Všichni narození			
1999	0,29 %	10,24 %	87,27 %
2002	0,24 %	9,37 %	88,27 %

Incidence VV podle četnosti těhotenství, IVF x normální populace, ČR , 1995 - 1999



Výskyt vícečetných těhotenství v ČR, 1993 - 2000

Narození / Rok	1993	1994	1995	1996	1997	1998	1999	2000
Počet porodů	120 364	105 888	95 344	89 688	89 690	89 338	88 286	89 754
Samostatně (jednočetný porod)	119 271	104 876	94 313	88 624	88 485	87 869	86 829	88 363
Dvojčat	1080	998	1 010	1 034	1 170	1 447	1 427	1 368
Trojčat	13	13	20	29	35	22	29	22
Čtyřčat	0	1	1	1	0	0	1	1
Počet jednočetných porodů, které připadají na jeden porod dvojčat	103	105	93	86	76	61	61	65