Infant Mortality due to Birth Defects in the Czech Republic in 1994 – 2006

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Objective

- to analyse infant mortality rates in children with selected types of birth defects and

- to estimate their contribution to total infant mortality and morbidity

Methodology and Data Sources I

- a retrospective data study
- 1994 – 2006 period
- whole area of the Czech Republic
- birth defects incidences data ← Institute of Health Information and Statistics (National Register of Congenital Anomalies & National Newborns Register)
- prenatal diagnostics data ← particular depts of medical genetics from all the country
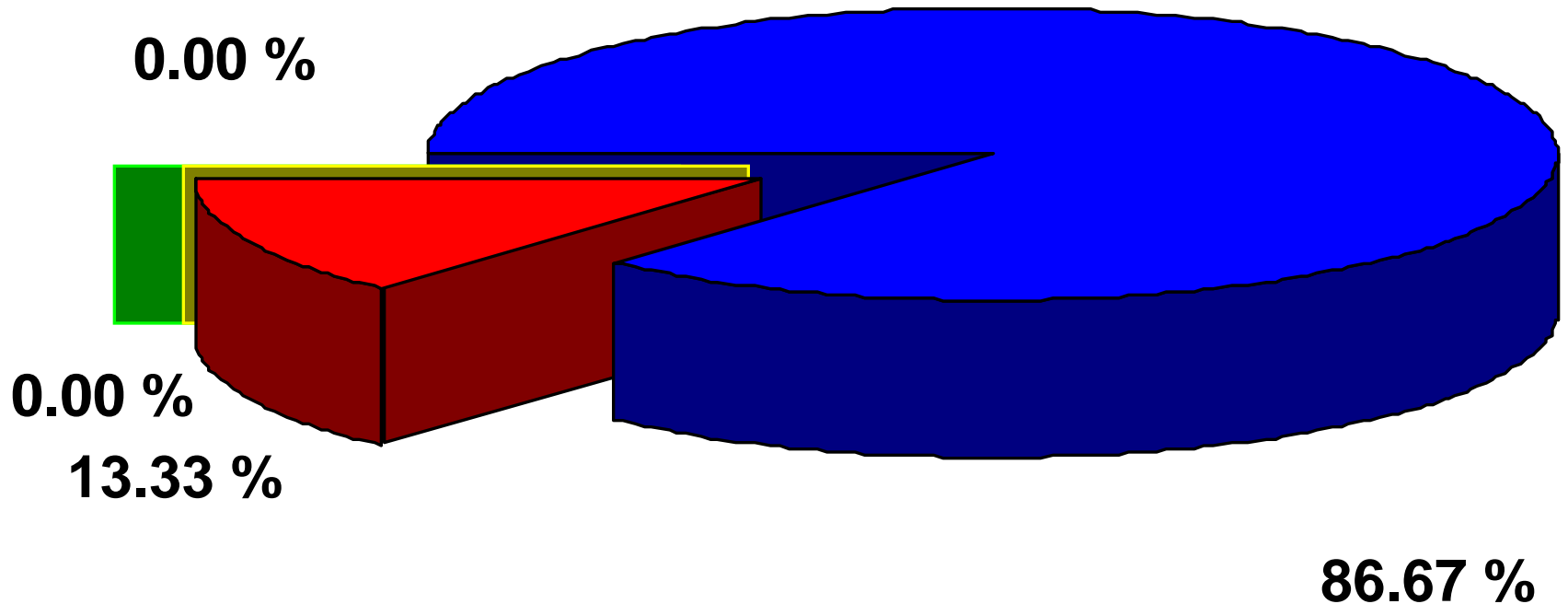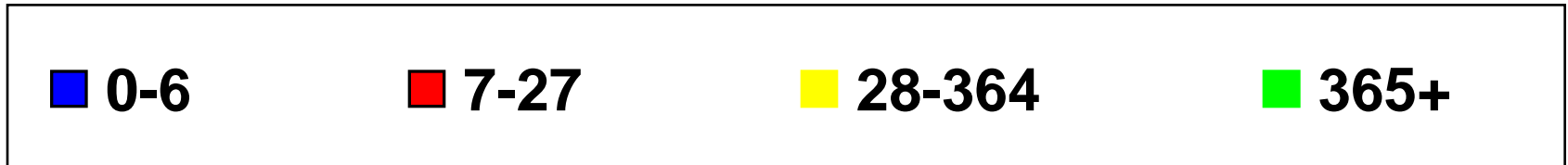
Methodology and Data Sources II

- 1 132 567 children born in the Czech Republic during 1994 – 2006
- < 42 000 children were born with at least one birth defect (~339/10 000 live births)
- 14 types of birth defects

Results

Anencephaly
% of surviving (intervals in days)
(n=345;**14**)

| ■ 0-6 | ■ 7-27 | ■ 28-364 | ■ 365+ |

0.00 %

0.00 %

13.33 %

86.67 %

Spina bifida
% of surviving (intervals in days)
(n=515;**233**)

Legend:
- ■ 0-6
- ■ 7-27
- ■ 28-364
- ■ 365+

84.58 %

4.48 %

4.48 %

6.47 %
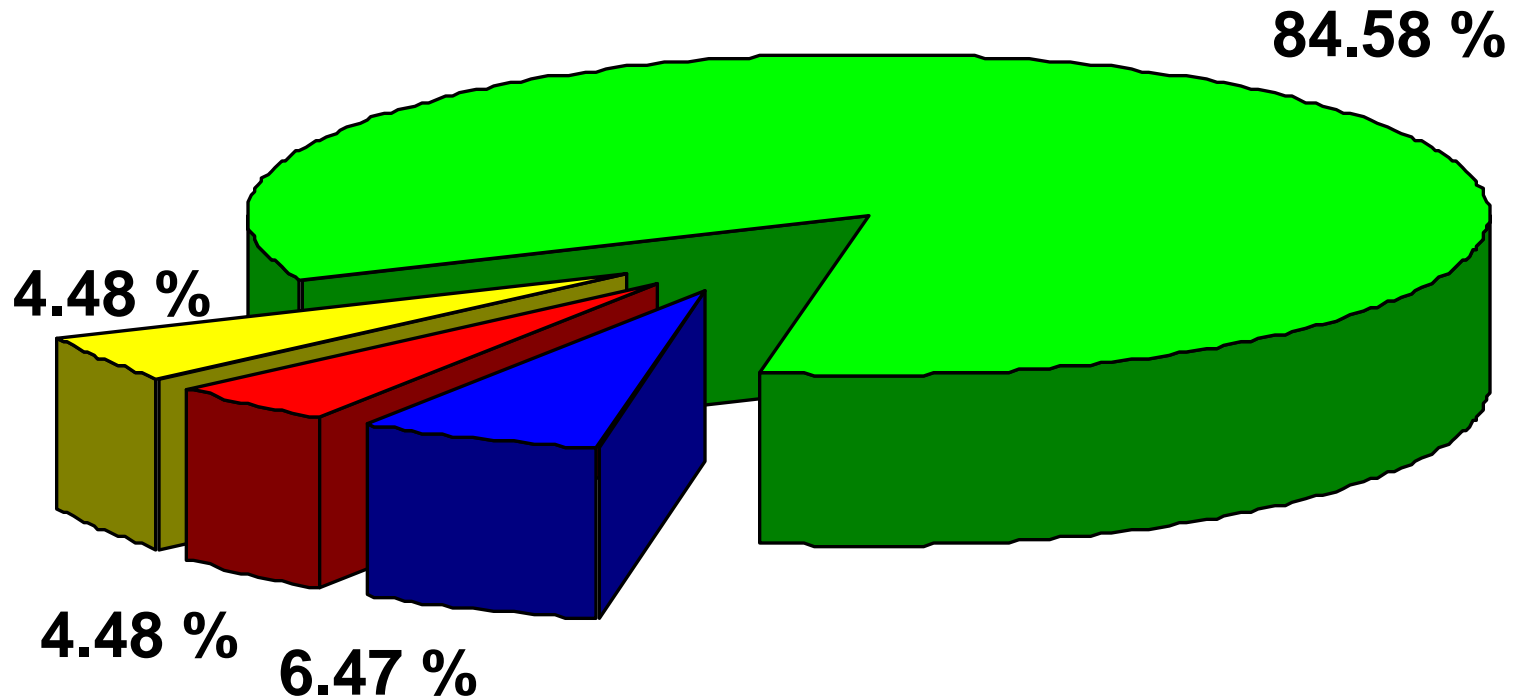
Encephalocele

% of surviving (intervals in days)
(n=107;**38**)

Legend:
- ■ 0-6
- ■ 7-27
- ■ 28-364
- ■ 365+

4.35 %

2.17 %

10.87 %

82.61 %
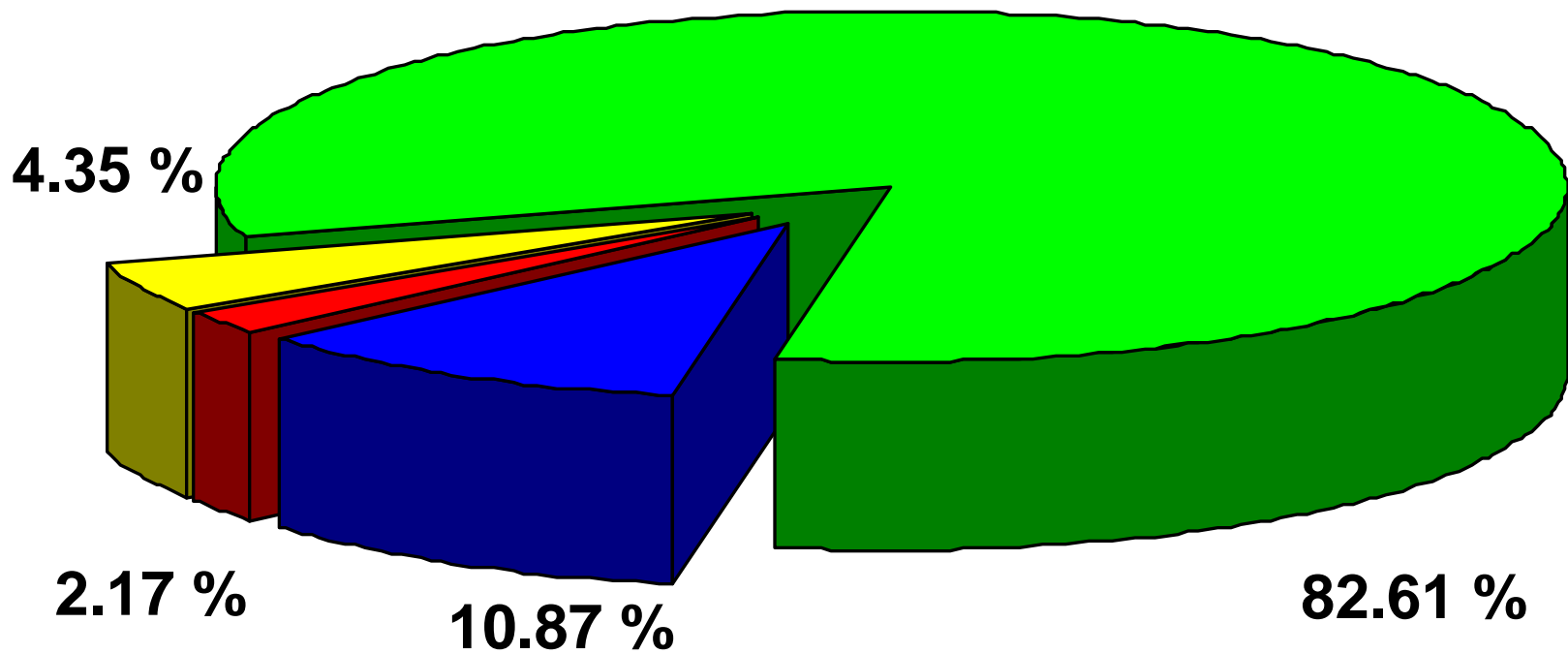
NTD

% of surviving (intervals in days)
(n=967;**285**)

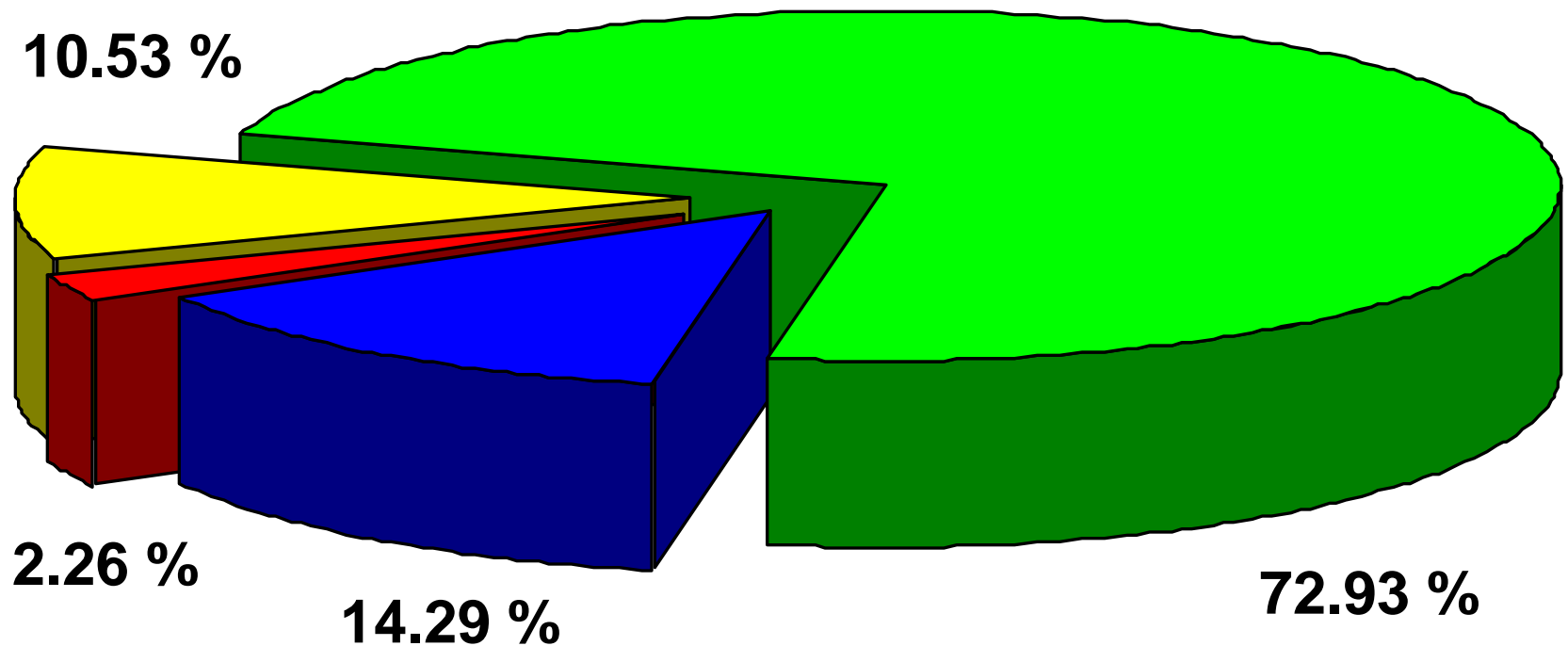|			
■ 0-6	■ 7-27	■ 28-364	■ 365+

4.20 %

4.58 %

11.83 %

79.39 %
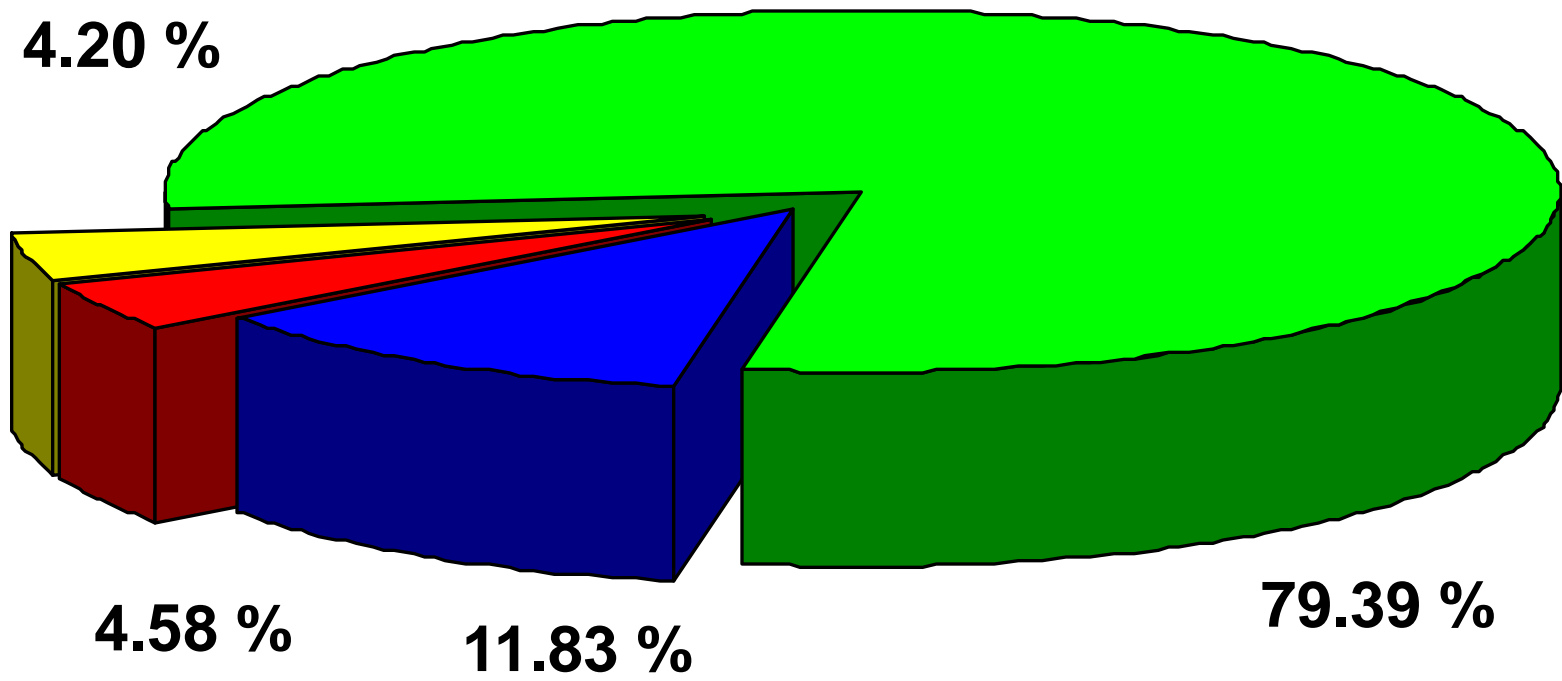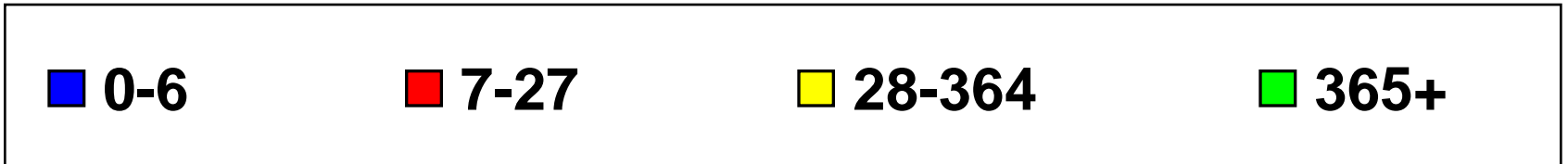
Congenital hydrocephalus
% of surviving (intervals in days)
(n=538;**305**)

Legend: ■ 0-6 ■ 7-27 ■ 28-364 ■ 365+

10.53 %

2.26 %

14.29 %

72.93 %
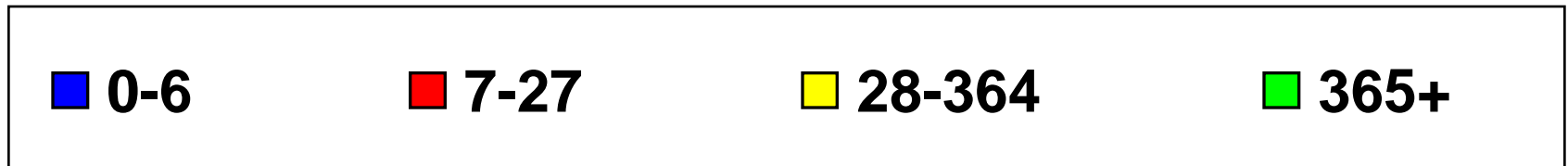
Omfalocele

% of surviving (intervals in days)
(n=314;**142**)

■ 0-6 **■ 7-27** **□ 28-364** **■ 365+**

0.75 %

4.51 %

6.77 %

87.97 %
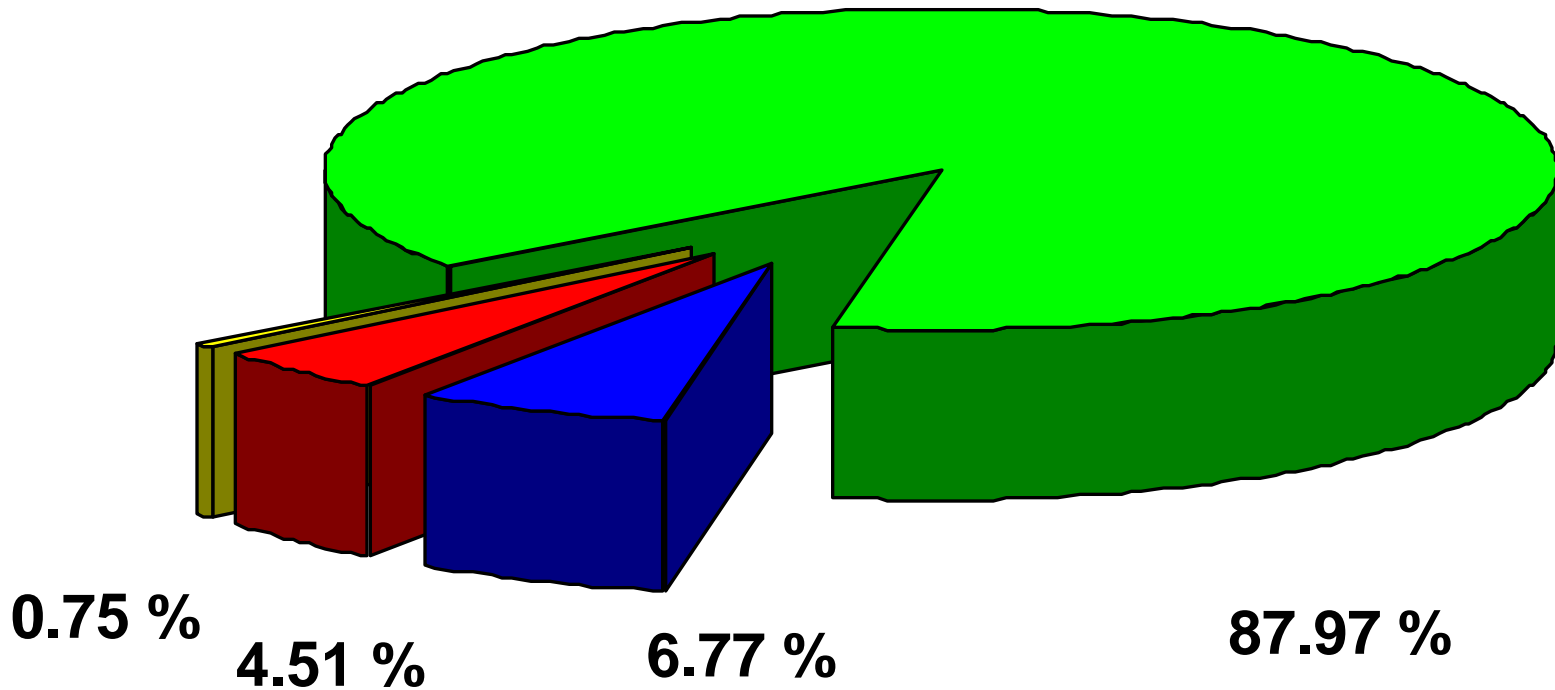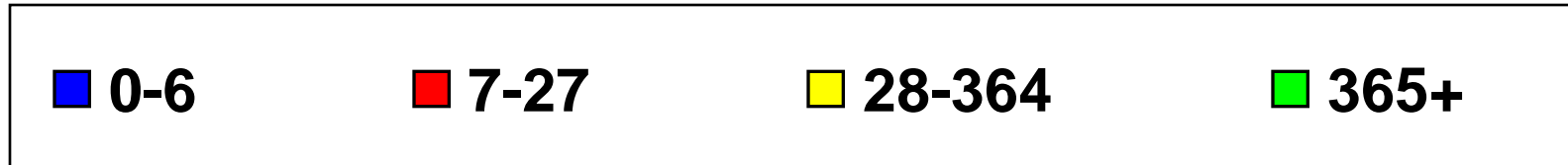
Gastroschisis

% of surviving (intervals in days)
(n=361;**80**)

Legend:
- ■ 0-6
- ■ 7-27
- ■ 28-364
- ■ 365+

2.86 %

84.29 %

4.29 %

8.57 %
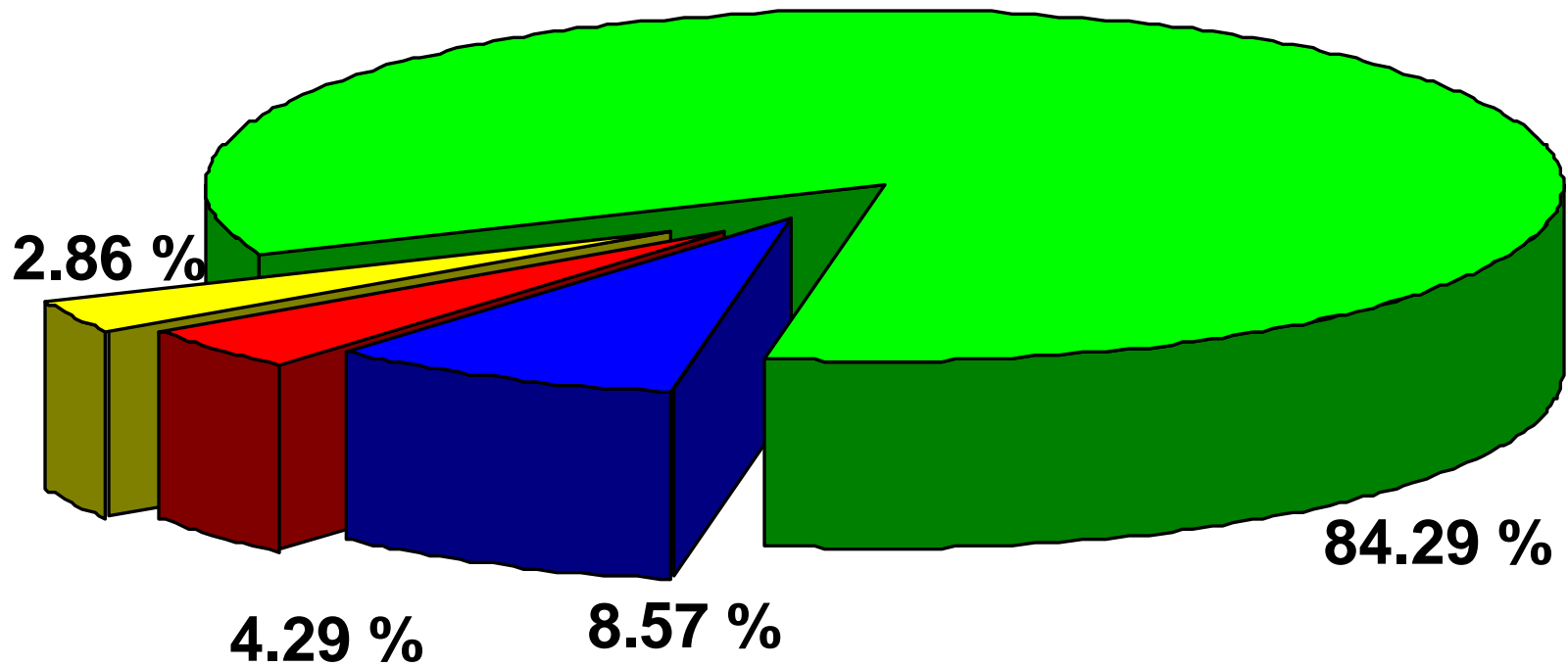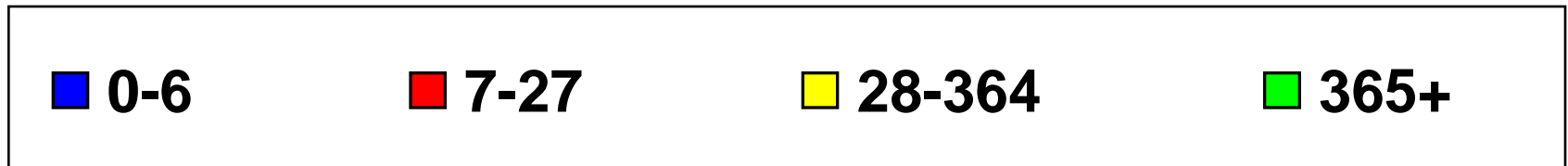
AWD

% of surviving (intervals in days)
(n=675;**222**)

Legend: ■ 0-6   ■ 7-27   ■ 28-364   ■ 365+

1.65 %

85.16 %

4.95 %   8.24 %
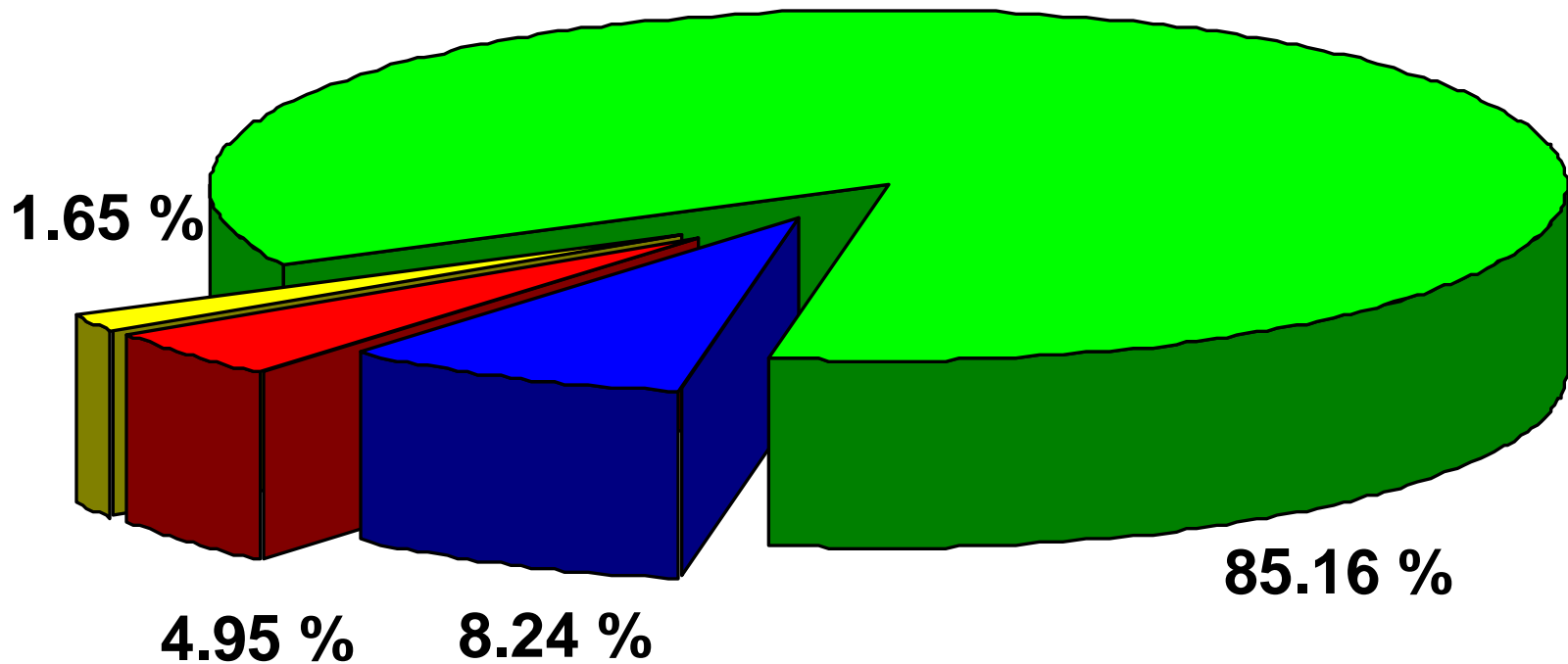
Oesophageal defects

% of surviving (intervals in days)
(n=241;**NA**)

■ 0-6	■ 7-27	■ 28-364	■ 365+

5.37 %

1.65 %

5.37 %

87.60 %
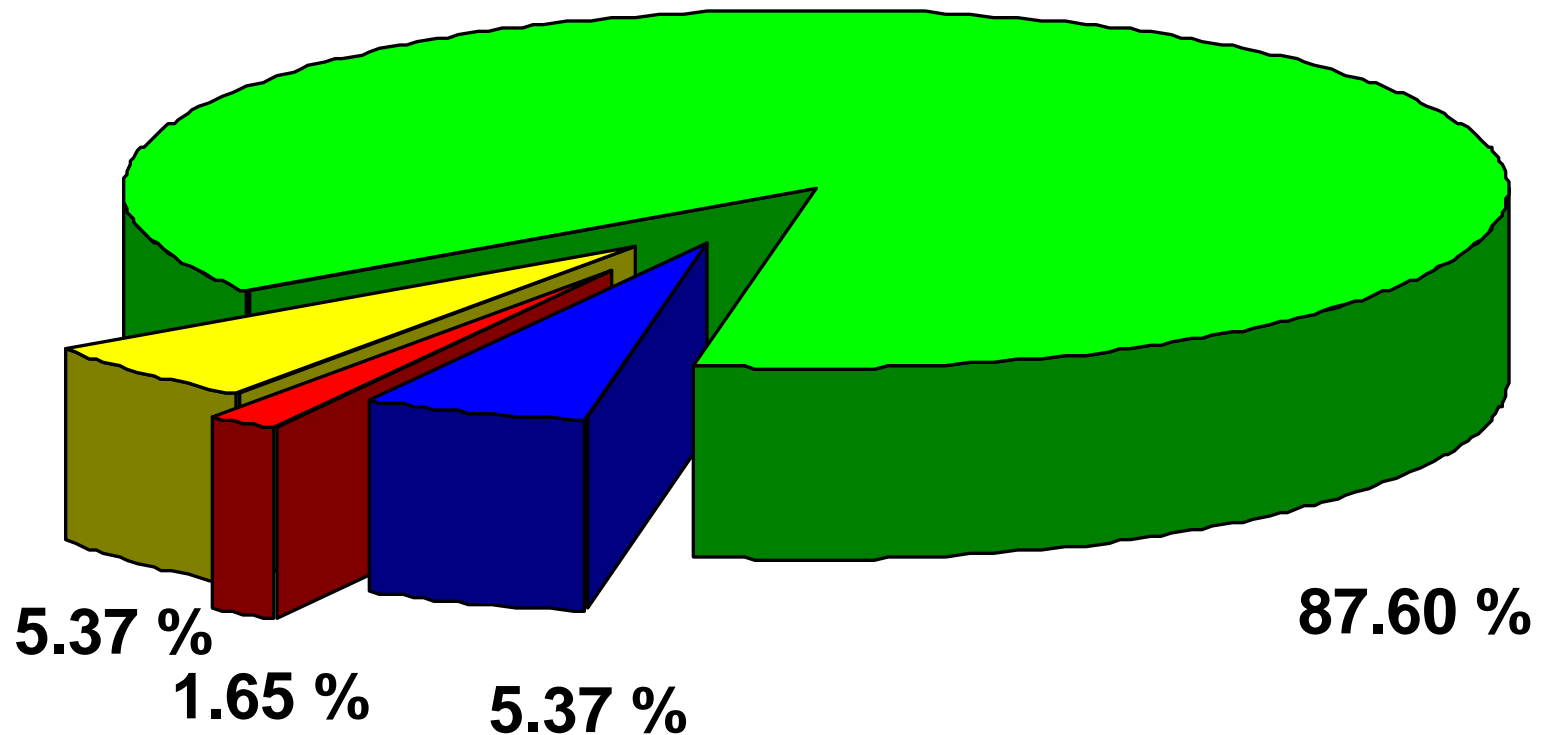
Anorectal malformations

% of surviving (intervals in days)
(n=302;**NA**)

■ **0-6**	■ **7-27**	☐ **28-364**	☐ **365+**

91.64 %

3.06 % **1.39 %** **3.90 %**
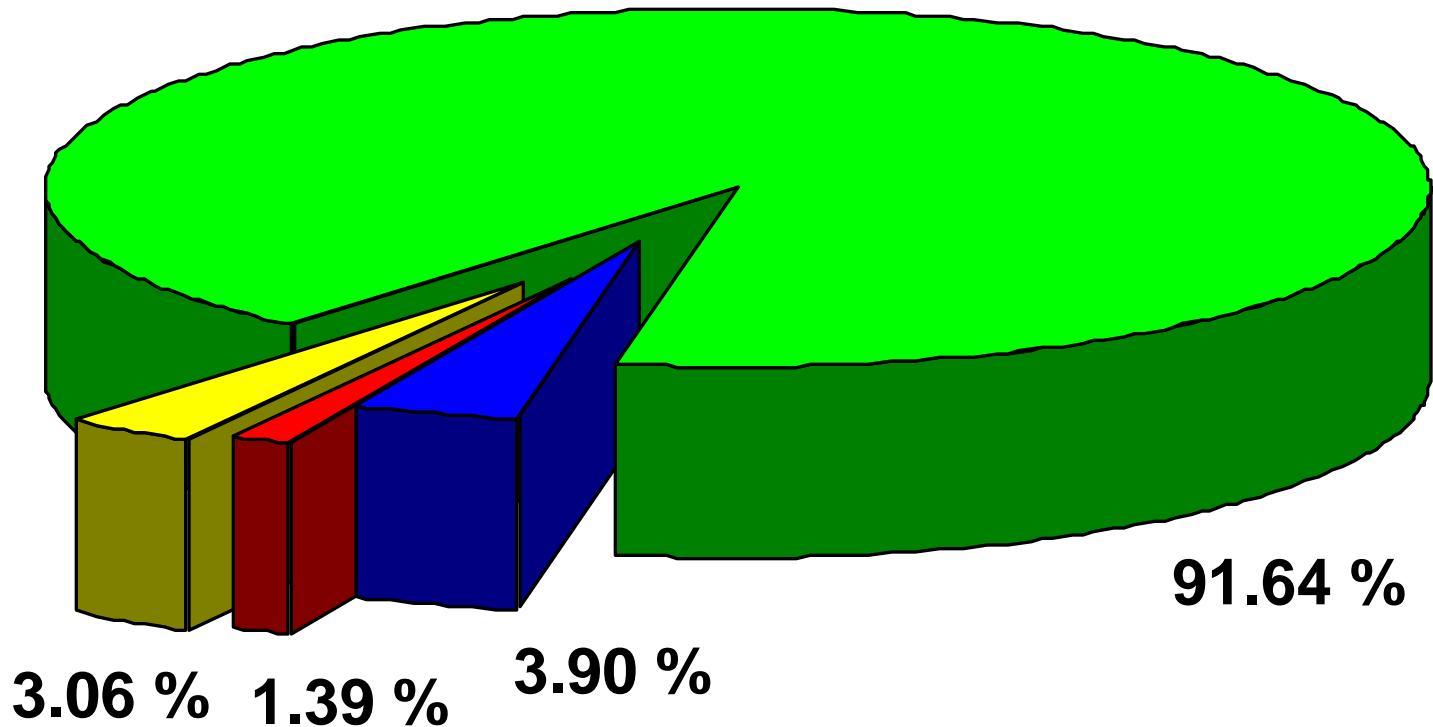
Diaphragmatic hernia

% of surviving (intervals in days)
(n=294;**235**)

| ■ 0-6 | ■ 7-27 | ■ 28-364 | ■ 365+ |

1.85 % **3.70 %**

33.80 % **60.65 %**
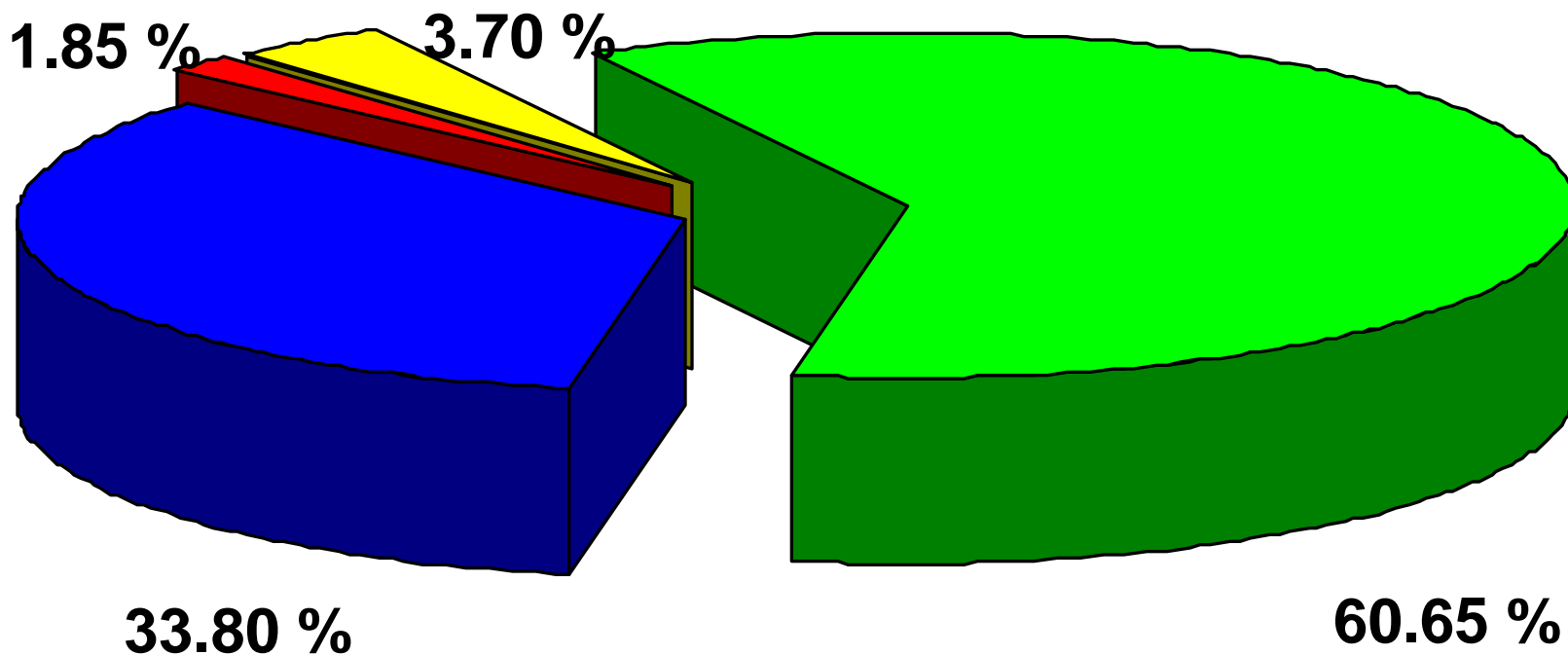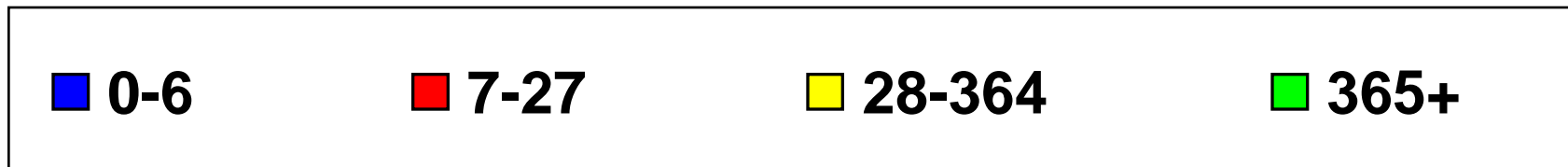
Renal agenesis/hypoplasia

% of surviving (intervals in days)
(n=606;**462**)

■ **0-6**	■ **7-27**	■ **28-364**	■ **365+**

0.88 %

4.41 %

19.38 %

75.33 %
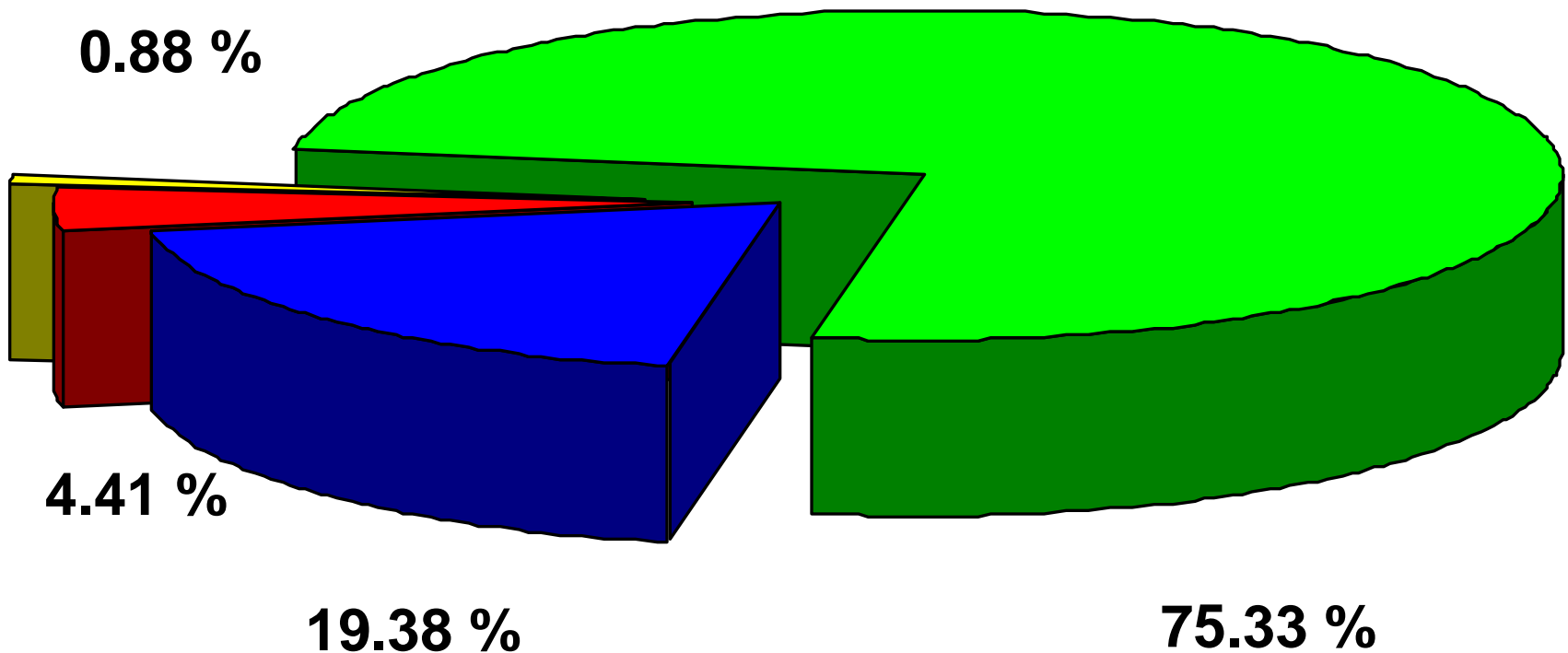
Cystic kidney

% of surviving (intervals in days)
(n=627;**477**)

	0-6		7-27		28-364		365+

1.62 %

1.39 % 7.85 %

89.15 %
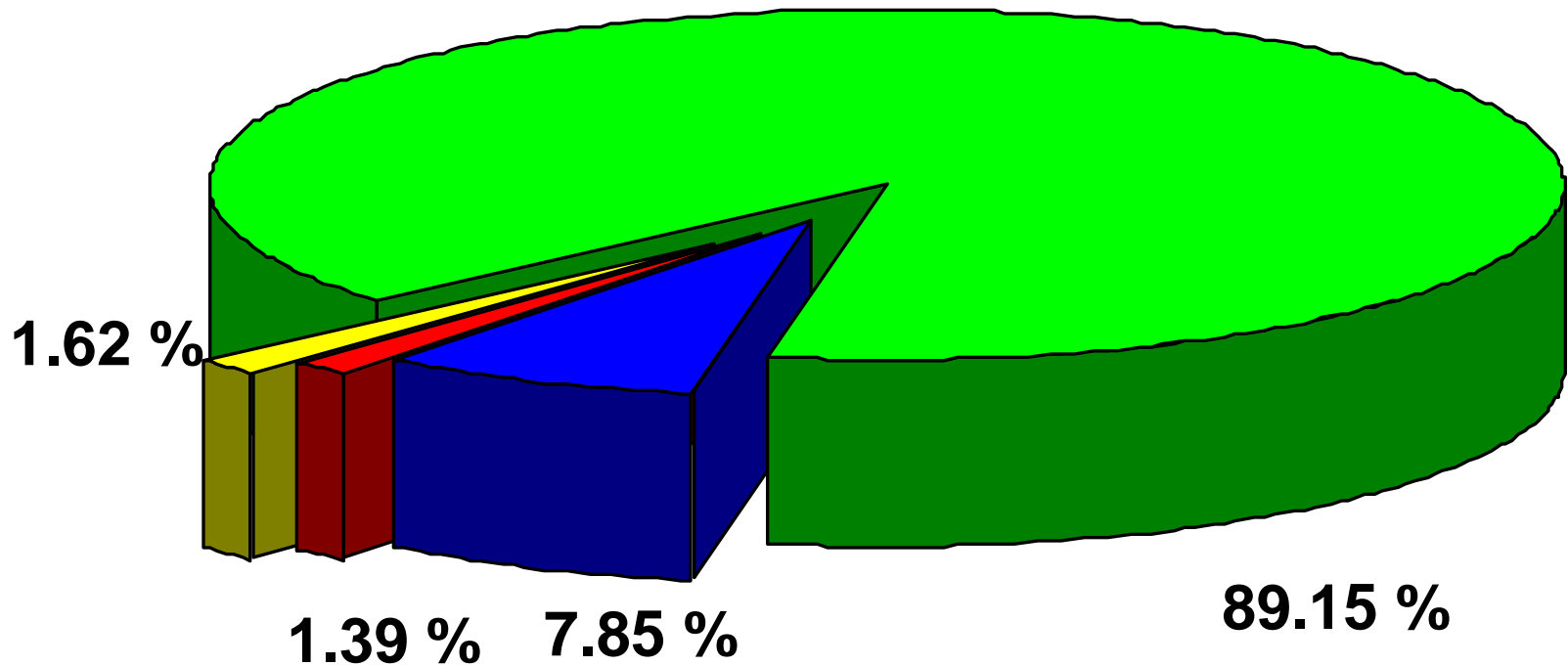
Down syndrome

% of surviving (intervals in days)
(n=1974;**815**)

Demographic indicators I

(compiled data from the Institute of Health Information and Statistics, Prague)

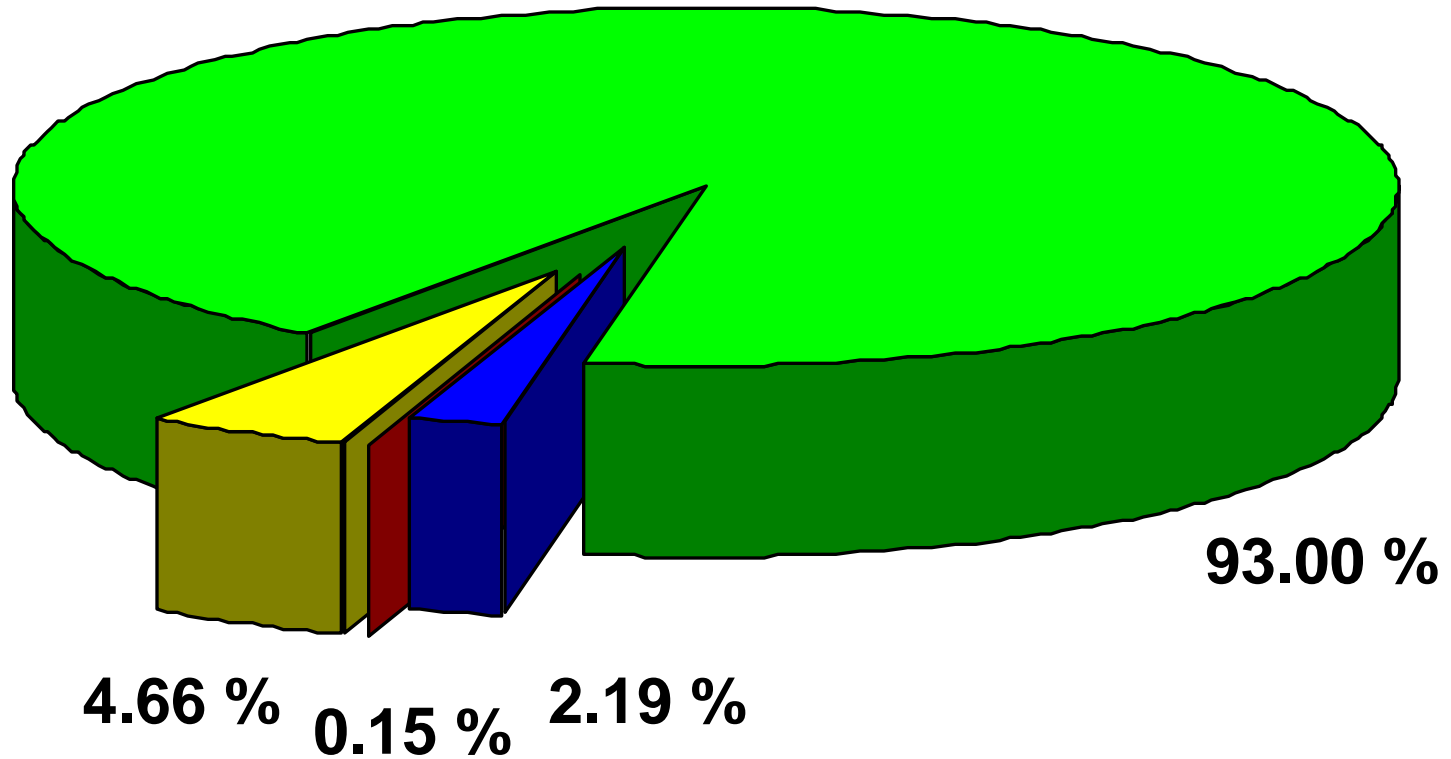| Year/ Statistics	1998	1999	2000	2001	2002	2003	2004	2005	2006
Live births (total)	90535	89471	90910	90715	92786	93685	97664	102211	105831
Stillbirths (per 1000 births)	3.2	3.4	2.8	2.9	2.8	2.9	2.7	2.7	NA
Spontaneous abortions (per 100 births)	11.9	12.1	12.0	11.8	11.7	12.0	12.7	12.7	NA

Demographic indicators II

(compiled data from the Institute of Health Information and Statistics, Prague)

Year/ Statistics	1998	1999	2000	2001	2002	2003	2004	2005
Early neonatal mortality (0 – 27 days), all births (per 1000 births)	**1.9**	**1.9**	**1.6**	**1.5**	**1.7**	**1.4**	**1.3**	**1.1**
Early neonatal mortality (0 – 27 days), births without birth defects (per 1000 births)	NA	NA	1.0	0.9	1.0	0.8	1.0	0.8
Infant mortality (0- 364 days) (per 1000 births)	5.2	4.6	4.1	4.0	4.1	3.9	3.7	3.4

Demographic indicators II

(compiled data from the Institute of Health Information and Statistics, Prague)

Year/ Statistics	1998	1999	2000	2001	2002	2003	2004	2005
Early neonatal mortality (0 – 27 days), all births (per 1000 births)	1.9	1.9	1.6	1.5	1.7	1.4	1.3	1.1
Early neonatal mortality (0 – 27 days), births without birth defects (per 1000 births)	NA	NA	1.0	0.9	1.0	0.8	1.0	0.8
Infant mortality (0- 364 days) (per 1000 births)	5.2	4.6	4.1	4.0	4.1	3.9	3.7	3.4

Demographic indicators II

(compiled data from the Institute of Health Information and Statistics, Prague)

Year/ Statistics	1998	1999	2000	2001	2002	2003	2004	2005
Early neonatal mortality (0 – 27 days), all births (per 1000 births)	1.9	1.9	1.6	1.5	1.7	1.4	1.3	1.1
Early neonatal mortality (0 – 27 days), births without birth defects (per 1000 births)	NA	NA	1.0	0.9	1.0	0.8	1.0	0.8
Infant mortality (0- 364 days) (per 1000 births)	5.2	4.6	4.1	4.0	4.1	3.9	3.7	3.4

Conclusion (and message)

- **Birth defects - despite their rather rare occurrence - present a major contribution to infant mortality and morbidity in many countries.**

- **Prevention measures are an important tool to decrease a probability that a child with a birth defect will be born.**

Thank you for your attention!

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