

Reduction in stillbirths at term after new birth induction paradigm

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Background

- Denmark has for a long time had the lowest maternal mortality ever measured worldwide
 - We have by far the best prenatal screening also as compared to Norway and Sweden
 - Free for all pregnant women at all ages
 - High participation rate
 - High rate of pregnancy termination in case of fetal disease
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Four challenges

- 2-3 fetuses per 1000 die before delivered
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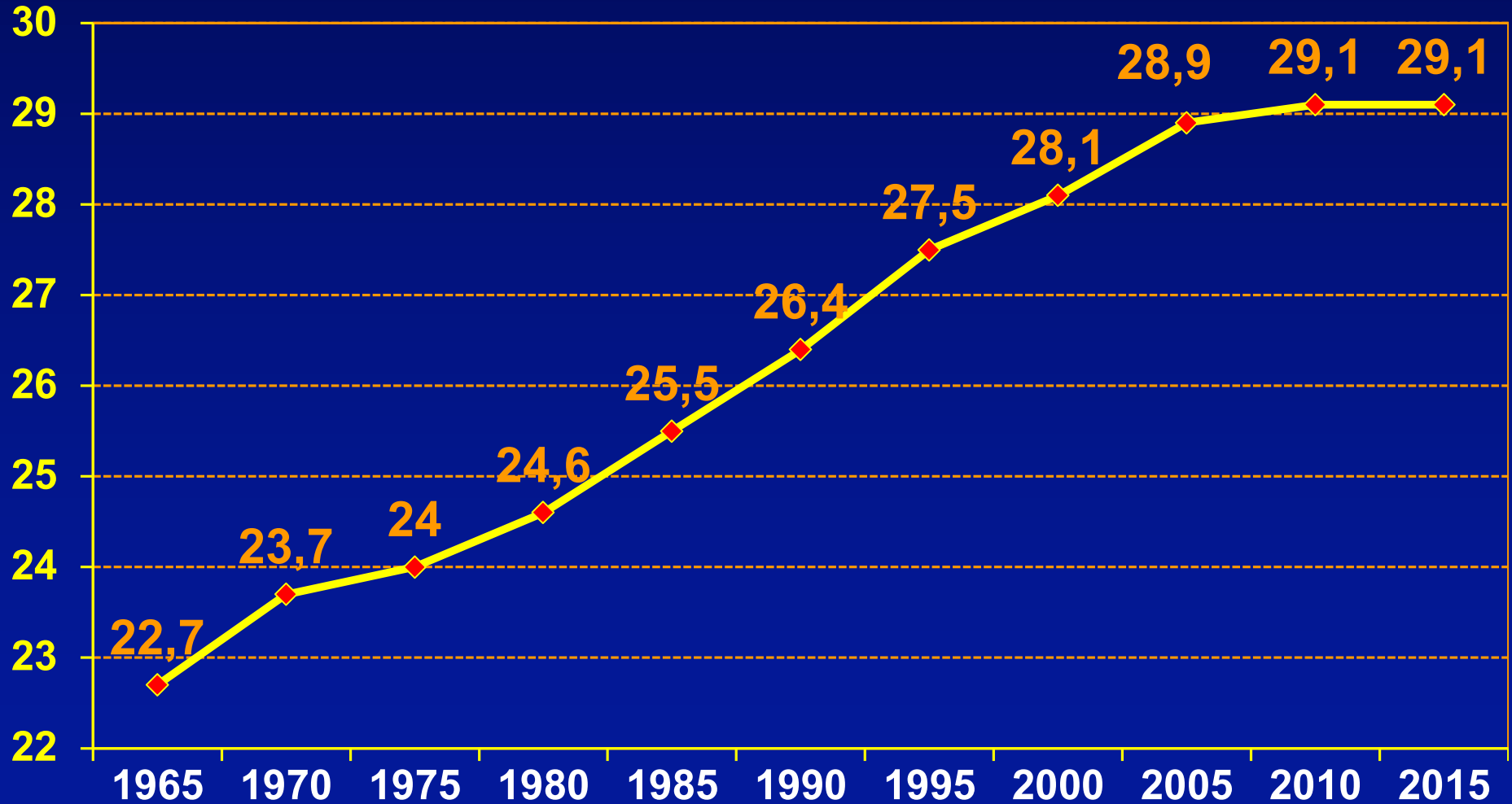
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Age at first birth Denmark 1965-2015



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 - 2% are born with congenital abnormalities despite our aneuploidy and US screening
 - Our delivering women become older
 - Our maternity wards are so challenged on staff, that our delivery service suffers, and an increasing proportion of women ask for home deliveries - making everything worse
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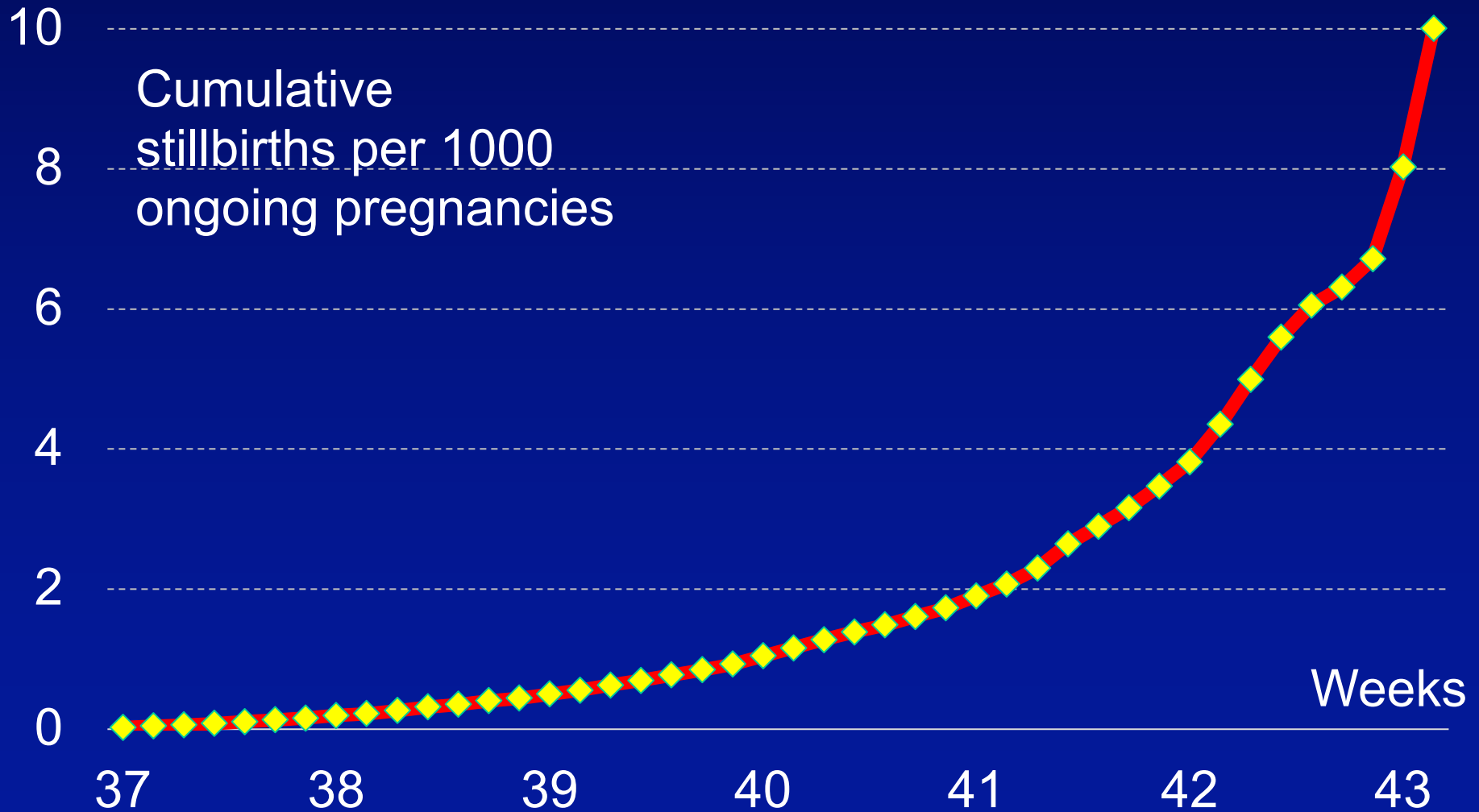
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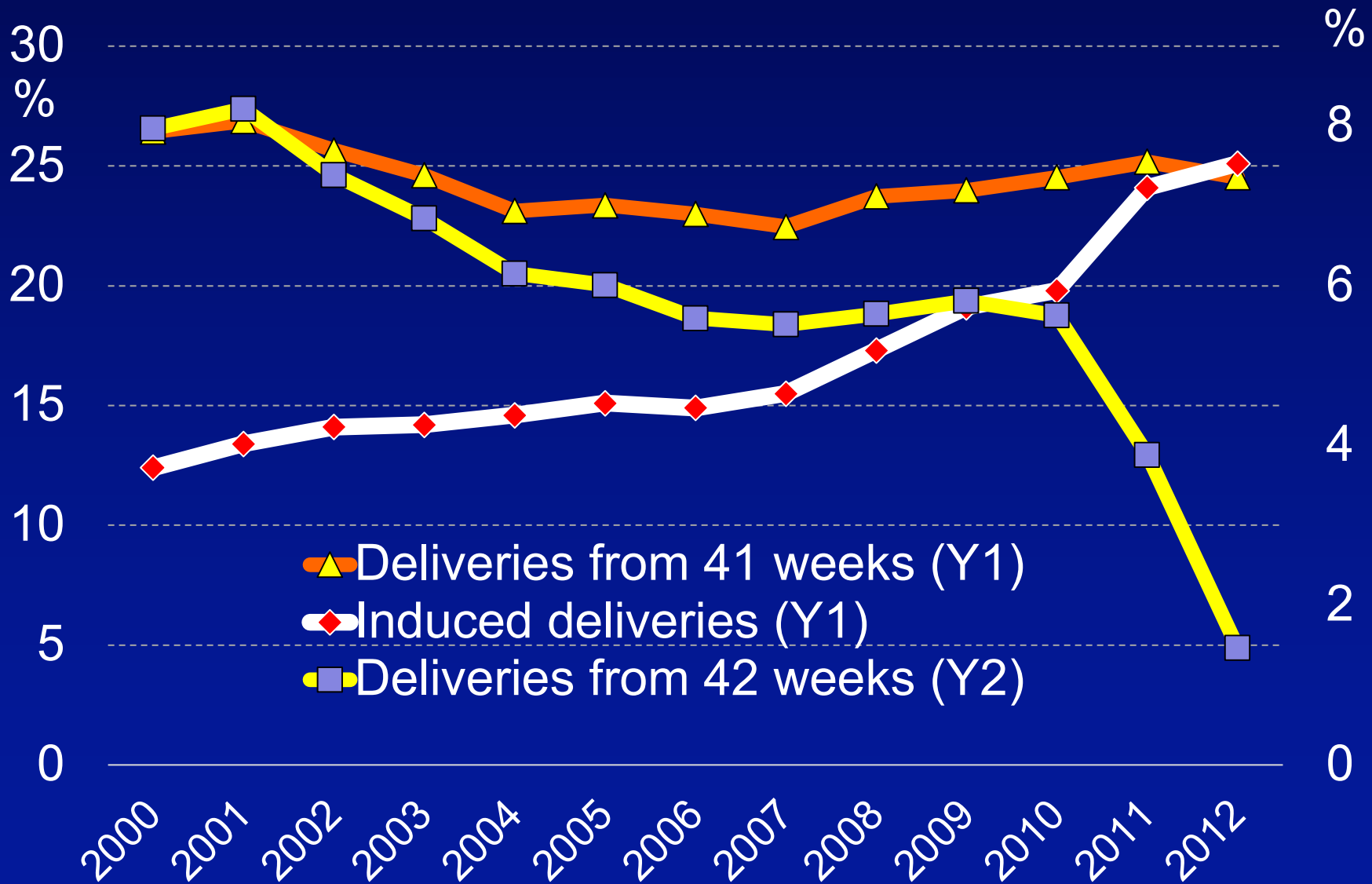
Stillbirths per 1000 born

	Denmark	Finland	Iceland	Norway	Sweden
2000					
2001					
2002					
2003	3,2	2,3	1,7	2,9	3,0
2004	2,2	2,0	4,9	2,8	2,9
2005	2,5	2,0	1,4	2,5	2,7
2006	2,3	2,1	2,7	2,6	2,7
2007	2,3	2,4	2,0	2,8	2,8
2008	2,1	2,0	2,3	2,7	2,7

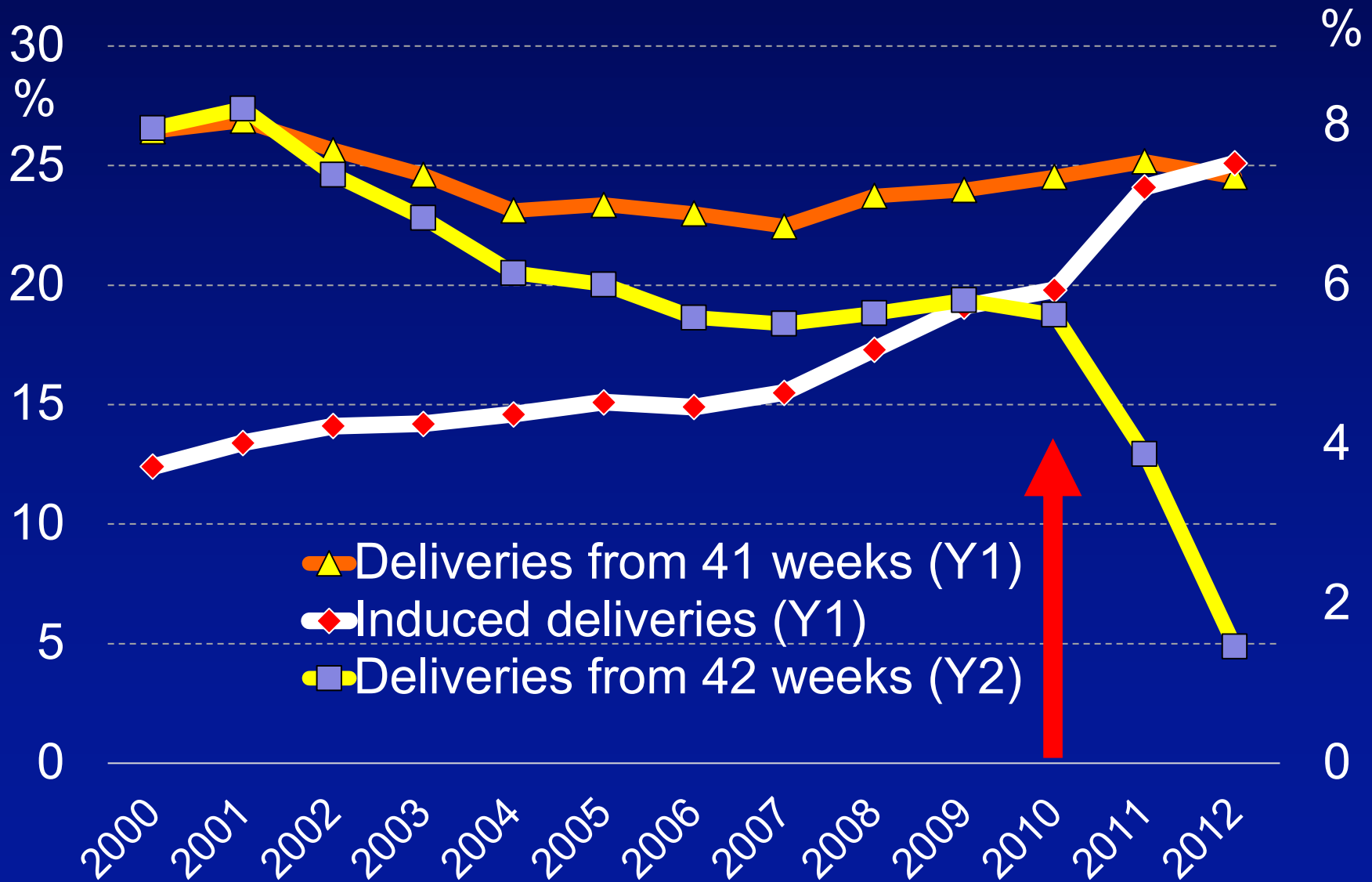
Stillbirth rate in Denmark 2000-2008 according to gestational age



Decision on earlier induction



Decision on earlier induction



Attempts to reduce stillbirth rate

- From 2000 to 2010 induction rate rose from 12% to 20%.
 - From 2010 to 2012 induction rate rose from 20 to 24%
 - Proportion of women delivering after 42 weeks fell from 5.6% to 1.5% from 2010 to 2012
 - What happened to the stillbirth rate?
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BMJ Open Reduction in stillbirths at term after new birth induction paradigm: results of a national intervention

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► Prepublication history and additional material is available. To view please visit

ABSTRACT

Objective: The risk of fetal death increases steeply after 42 gestational weeks. Since 2009, Denmark has had a more proactive policy including prevention of prolonged pregnancy, and early intervention in women with diabetes, preeclampsia, high body mass index and of a higher age group. The aim of this study was to describe the development in fetal deaths with this more proactive birth induction practice, and to identify and quantify contributing factors for this development.

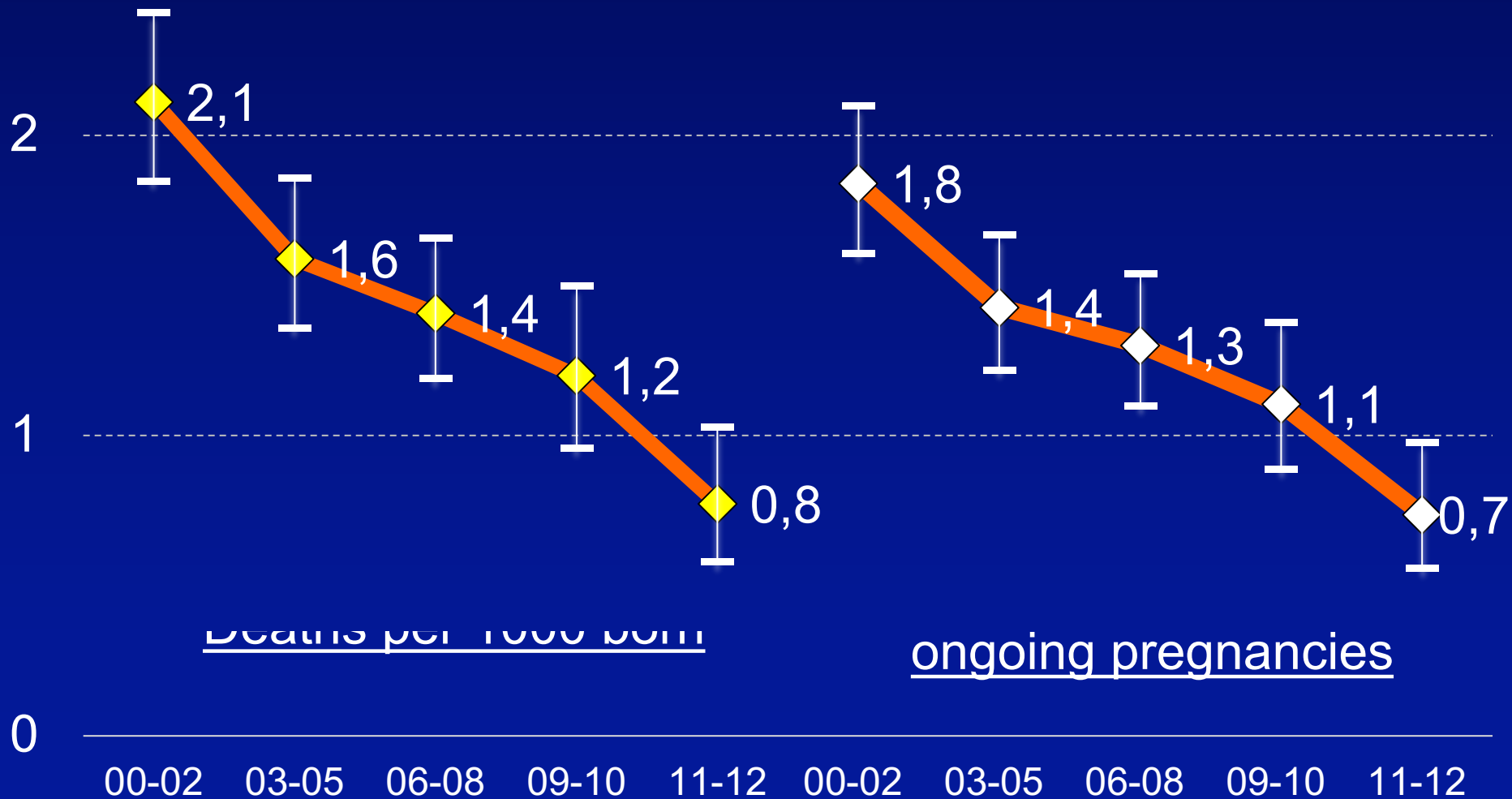
Design: National cohort study.

Setting: Denmark

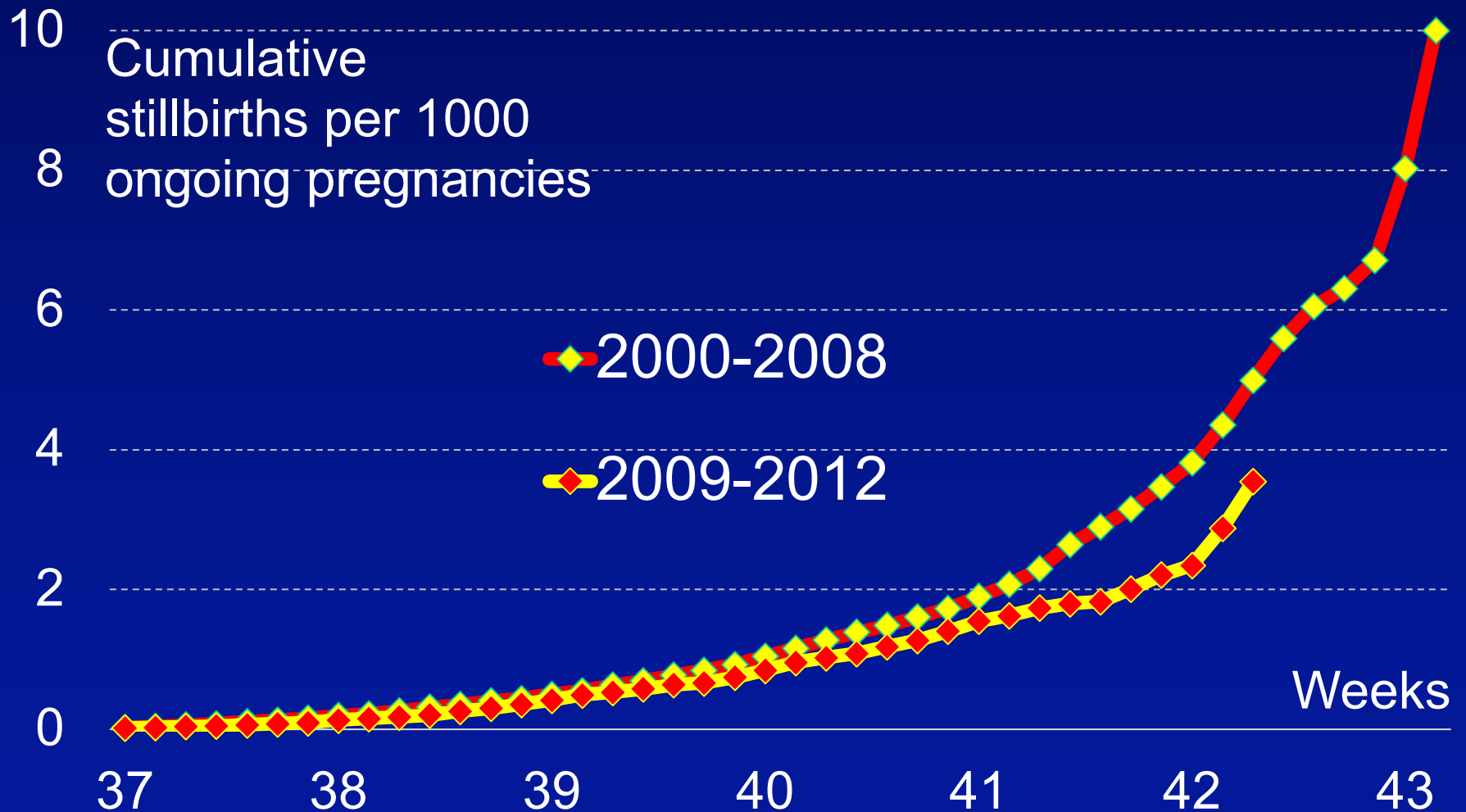
Strengths and limitations of this study

- Complete national data through a 13-year-long study period.
- Data analysed for all births after 37 weeks and after 40 weeks, respectively.
- Access to important confounders.
- Complete follow-up on all children born during the study period.
- A clear clinical message.

Stillbirth rate from 40 weeks in Denmark 2000-2012



Stillbirth rate in Denmark 2000-2008 and 2009-2012 according to GA



Perinatal outcomes

Perinatal outcomes following an earlier post-term labour induction policy: a historical cohort study

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Perinatal morbidity

Clinical parameter	2000-2008	2009-2012	Trend
Ph <7	0.6%	0.5%	↓
Apgar score <7/5min	0.6%	0.6%	→
NICU	1.2%	1.6%*	↑
Neonatal death	1.2‰	0.6‰*	↓
Cerebral palsy	1.3‰	0.8‰*	↓
Brain damage	1.5‰	1.4‰	↓
Birth weight ≥4,500g	5.7%	4.4%*	↓
Shoulder dystocia	0.9%	1.2%*	↑
Nerve injury	1.3‰	1.0‰*	↓

Confounding

Other improvements during study period:

- Centralisation to fewer larger maternity wards
 - NICU more available
 - Improvement in prenatal diagnosis
 - Better fetal surveillance during pregnancy
 - Better technical equipment
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2010	1,8	1,9	1,4	2,3	2,4
2011	1,7	1,7	0,9	2,5	2,7
2012	1,8	1,8	2,2	2,3	2,7
2013	1,8	1,6	0,9	2,2	2,6
2014	1,8	2,0	2,3	2,7	2,8

Nordisk perinatal statistik 2014. Perinatal statistics
in the Nordic countries 2014

Conclusion

- Evidenced based changes in obstetrical practice may profoundly improve perinatal outcome
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