



What is the optimal cesarean section rate in Scandinavia?

Cesarean section «good or harm»

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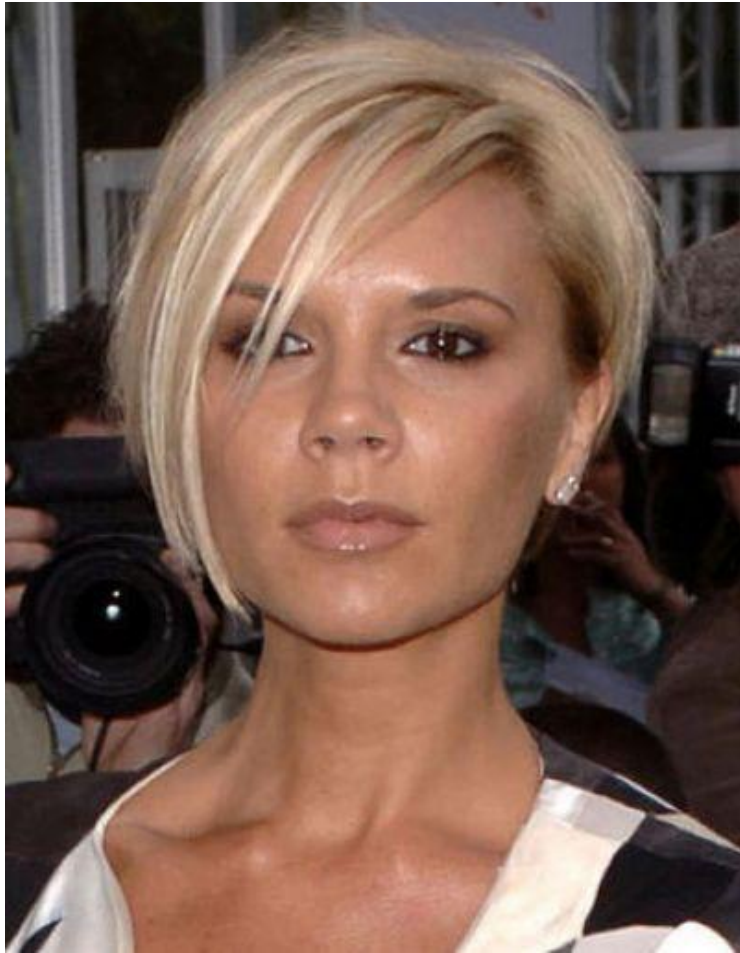
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Cesarean section «good or harm».

Increasing cesarean section rates!

The dilemma of health care in obstetrics today



Victoria Beckham

Victoria Beckham started the "Too Posh to Push" craze by delivering all three of her sons, and most recently her daughter, via C-section.

Too posh to push *-reality or myth-*

- Are middle-class mums too posh to push?
- «Too NICE to push» has c-section become safer than natural birth?
- «too posh to push» or too scared to push

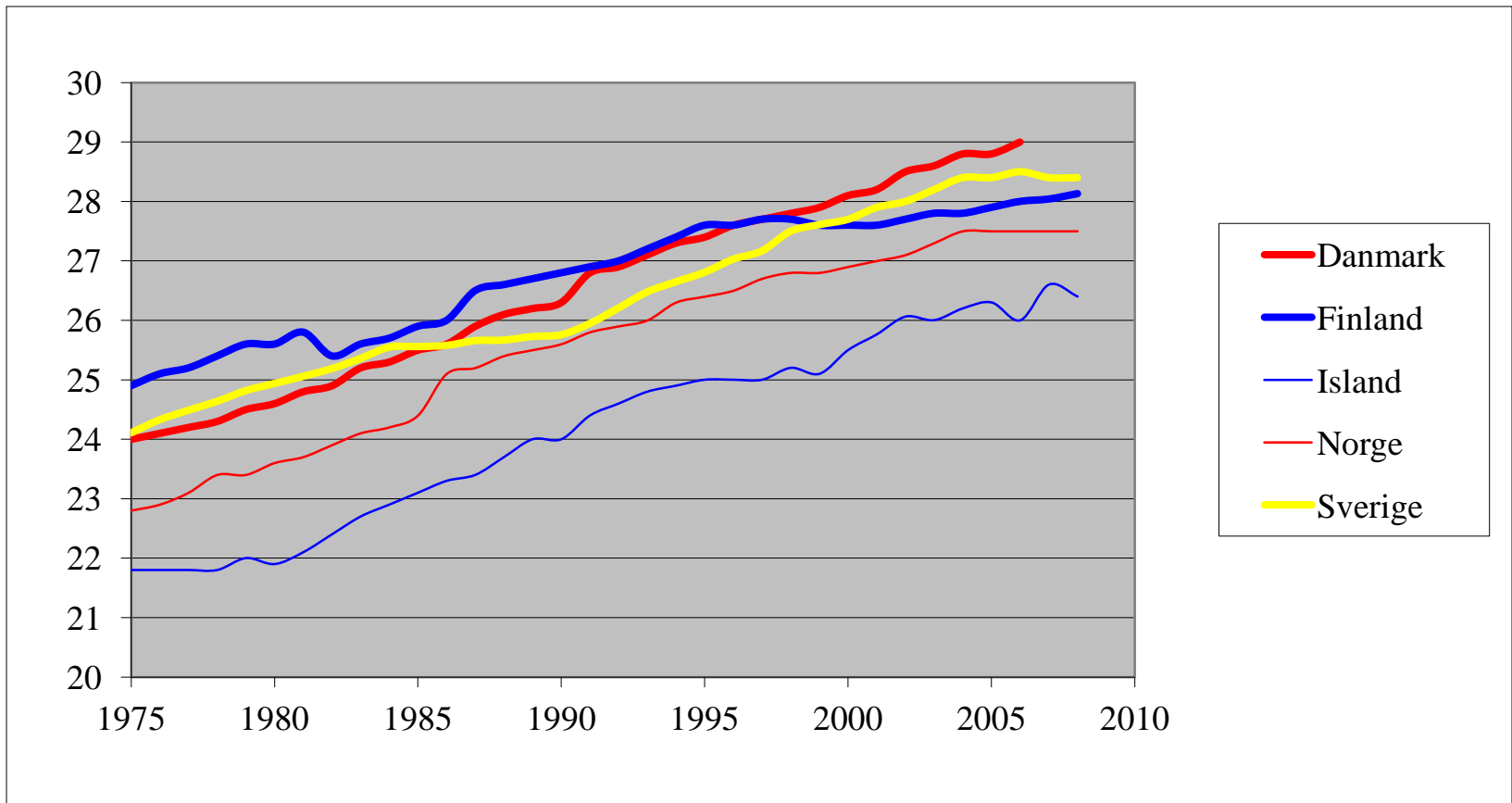
Too posh to push

- Are middle-class mums too posh to push?

-reality or myth-

Mean maternal age for primiparas 1975-2008, years

Source: THL, Nordic perinatal statistics



Older maternal age

Later marriage

Second marriage

Better contraceptive options

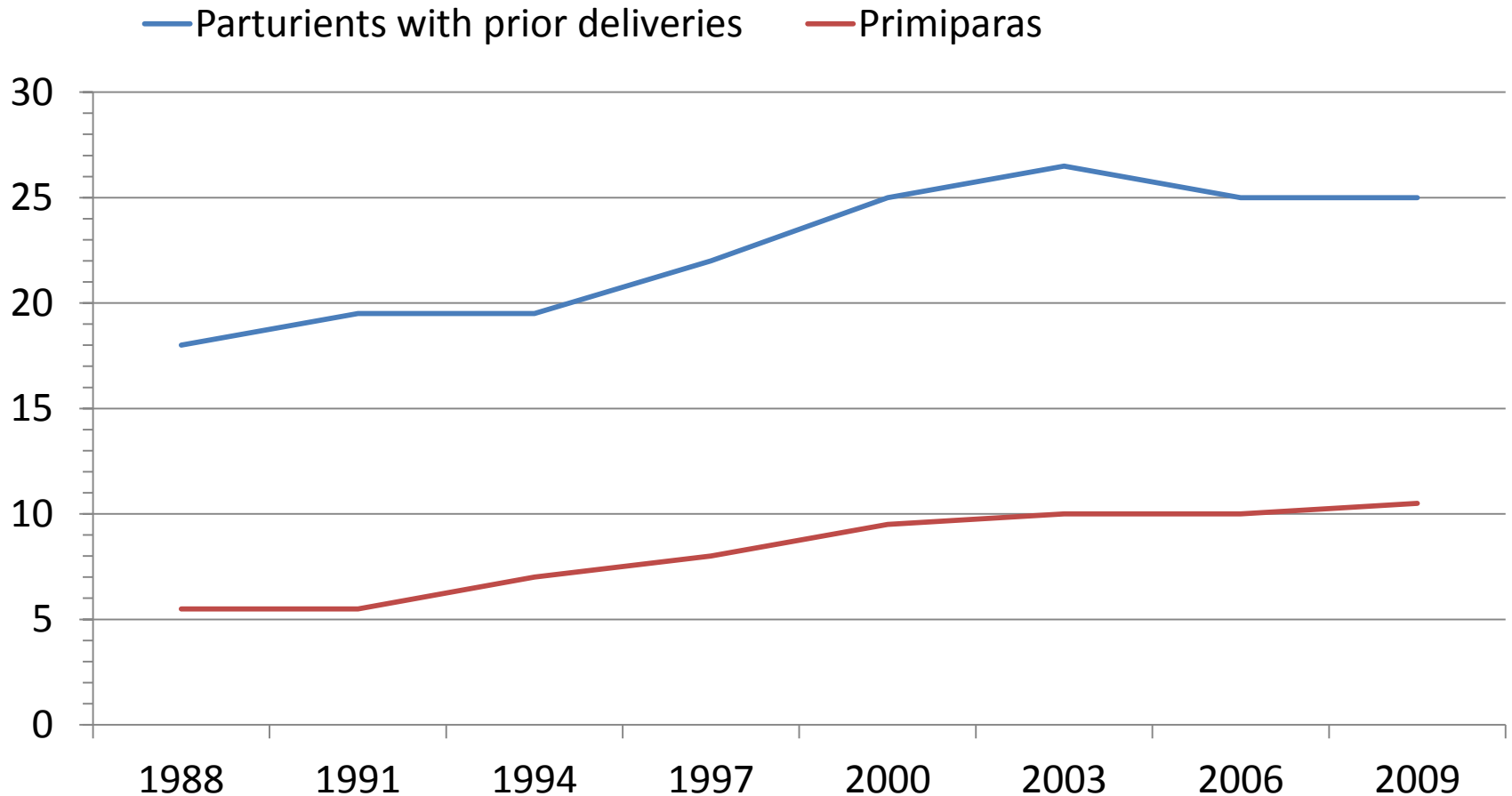
Further education

Career advancement



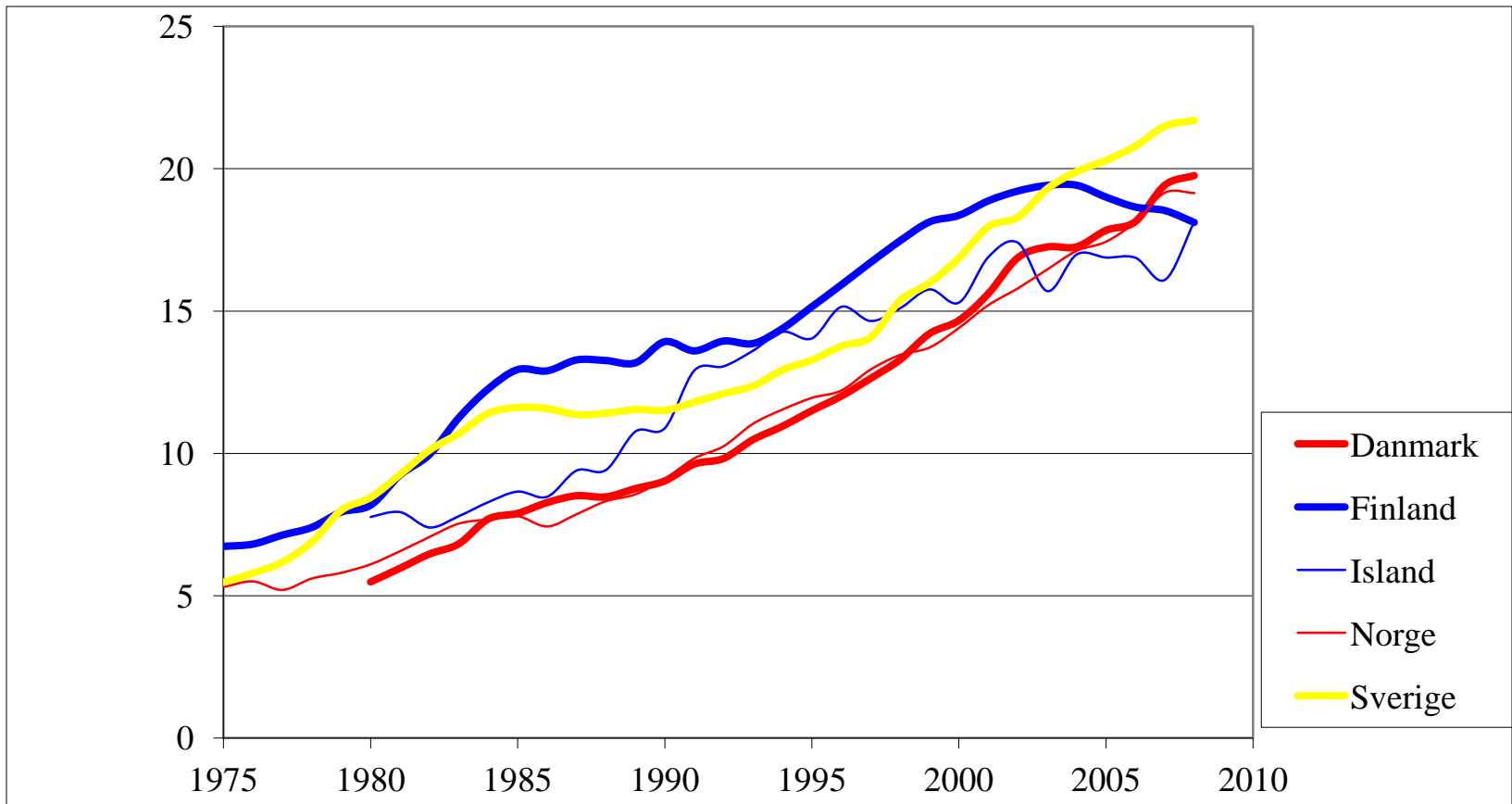
Primiparas and parturients with prior deliveries, aged 35 and over, 1987-2009, Finland

Ref: www.stakes.fi/tilastot/tilastotiedotect/2010



Maternal age 35 years or more 1975-2008, %

Source: THL, Nordic perinatal statistics

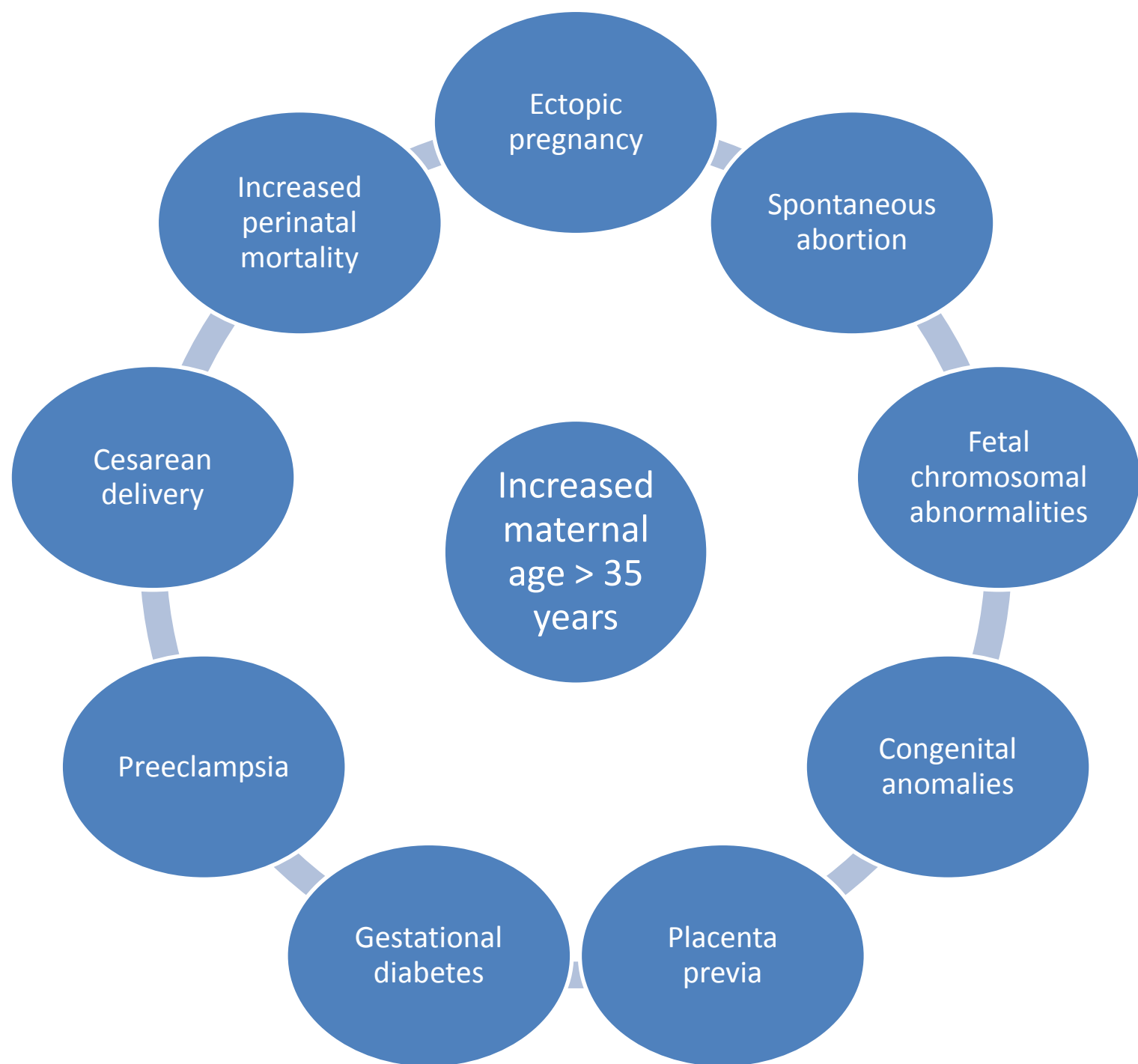


Older women

Acquire:

1. Medical conditions
2. Surgical conditions
3. Lifestyle factors
(obesity)





Older women

High rates of operative delivery:

1. Dysfunctional labor
 - failure to progress/uterine dysfunction
2. Medical complications
3. Induction of labor
4. Fetal malposition
5. Lower threshold for CS !
6. If VBAC more CS
 - failed trial of labor
 - uterine rupture



Too posh to push *-reality and myth-*

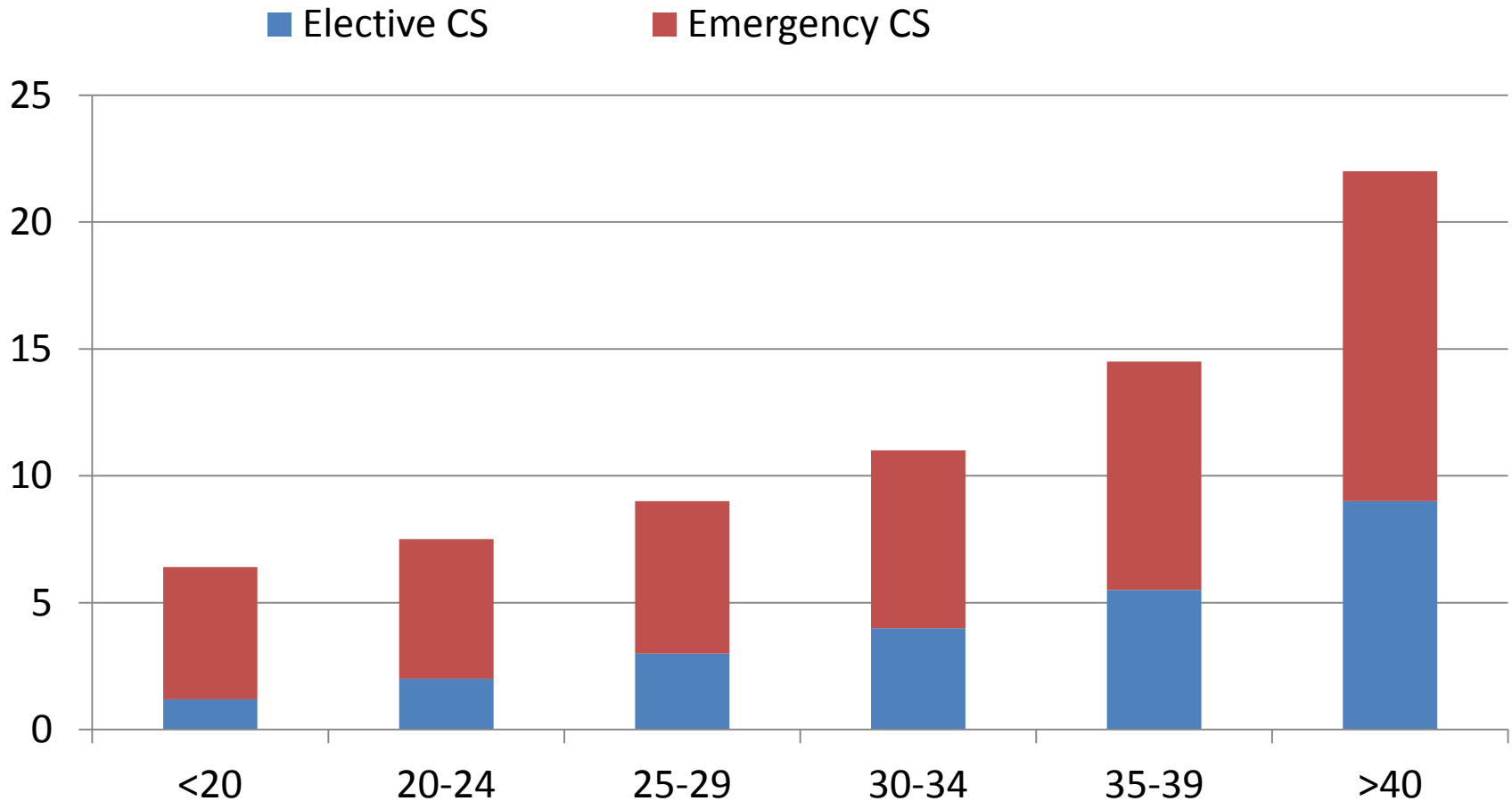
Are middle-class mums too posh to push?

Ref: Bragg et al. BMJ 2010;341:c5065doi:10.1136/bmj.c5065

Age	Number of CS	Rate of CS	OR	Adjusted OR*
Under 20	5304	13%	0.74	0.73 (0.70-0.76)
20-24	20709	17%	1	1
25-29	36691	22%	1.33	1.24 (1.21-1.27)
30-35	44915	27%	1.77	1.57 (1.52-1.62)
Over 35	40107	33%	2.4	2.14 (2.05-2.24)
Total	147726	24%		

Cesarean section in **low-risk** population (primipara and para one 1999-2006) Norway.

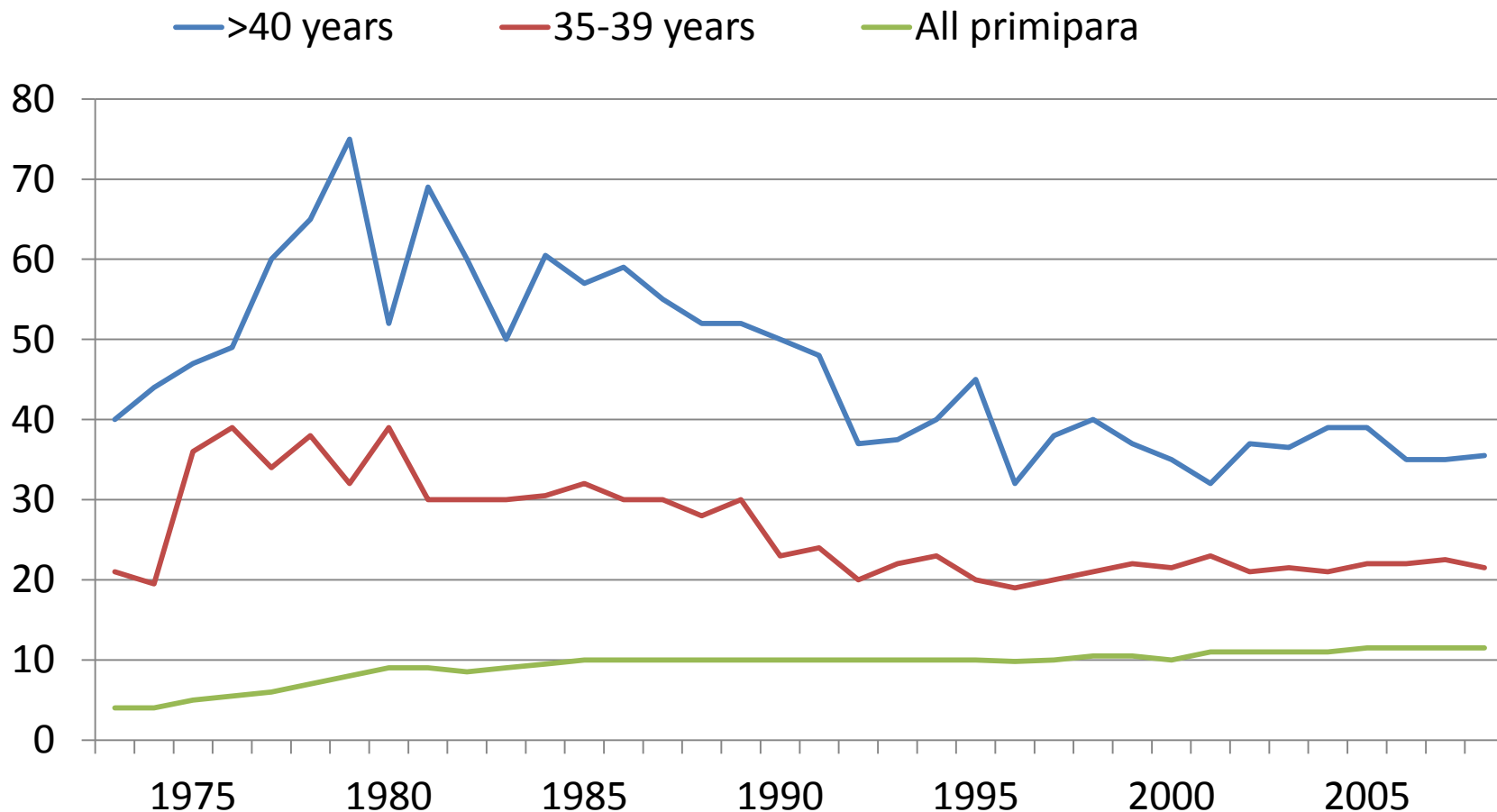
Ref Herstad et al. AOGS 2012;91:816-823



RR of CS delivery (adjusted maternal age, year of birth)	Educational level		1996-2004	RR (95% CI)
All deliveries	High	<i>p-value for trend</i>	1 (15.4%)	<0.001
	Medium		1.21 (1.19-1.24)	
	Low		1.34 (1.27-1.42)	
Low-risk	High	<i>p-value for trend</i>	1 (9.2%)	<0.001
	Medium		1.26 (1.21-1.30)	
	Low		1.50 (1.38-1.63)	
Pre-gestational diabetes	High	<i>p-value for trend</i>	1 (43.0%)	0.037
	Medium		1.14 (0.99-1.31)	
	Low		1.25 (0.92-1.69)	
Gestational diabetes	High	<i>p-value for trend</i>	1 (27.2%)	0.001
	Medium		1.37 (1.12-1.67)	
	Low		1.55 (1.01-2.38)	
SGA	High	<i>p-value for trend</i>	1 (24.1%)	0.007
	Medium		1.10 (1.03-1.18)	
	Low		1.12 (0.96-1.30)	
Breech presentation	High	<i>p-value for trend</i>	1 (65.4%)	0.003
	Medium		1.06 (1.02-1.09)	
	Low		1.04 (0.95-1.13)	
Placenta previa	High	<i>p-value for trend</i>	1 (90.1%)	0.552
	Medium		1.04 (0.96-1.13)	
	Low		0.98 (0.76-1.27)	

Percentage of primipara in Norway delivered by C-section (term, singleton, cephalic)

Waldenstrøm et al. BJOG 2012



Forget “too posh to push”

- Health professionals resorts to the:
 - too old
 - too sick
 - too fat
 - *and asking for it*
- Are middle-class mums «too posh to push»?
The myth has been busted



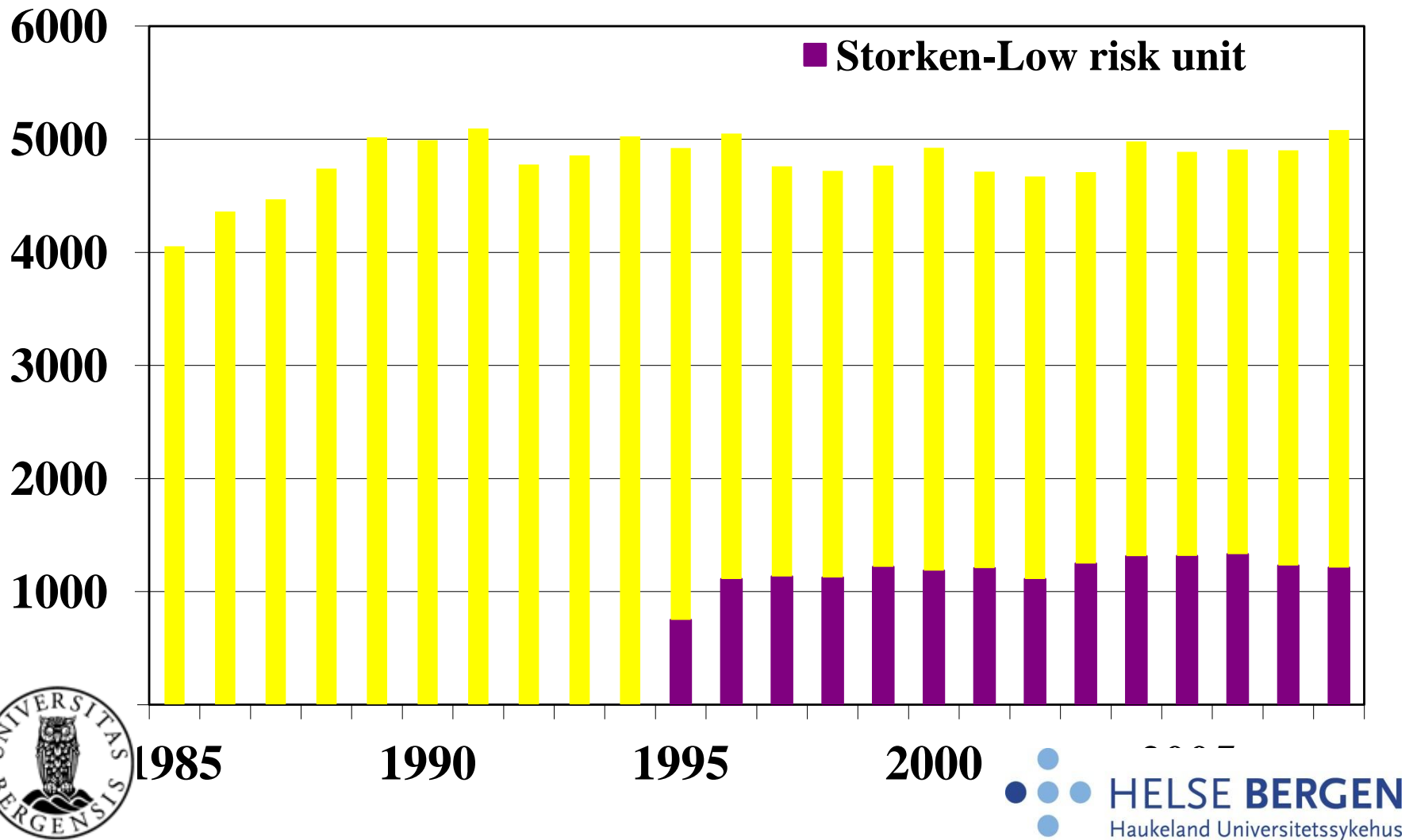
Kvinnekliviken



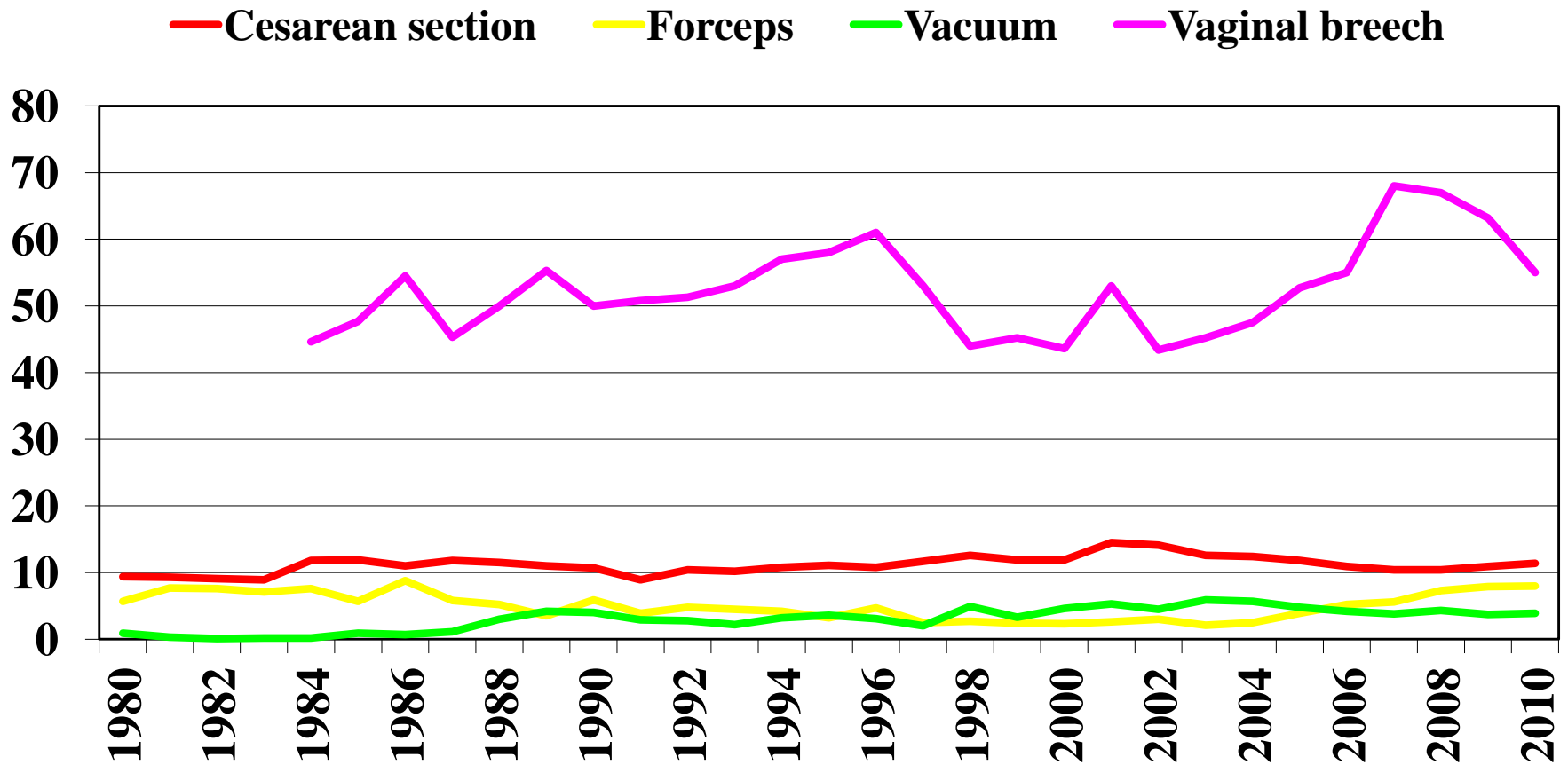
Haukeland universitetssykehus, Bergen

Annual number of deliveries

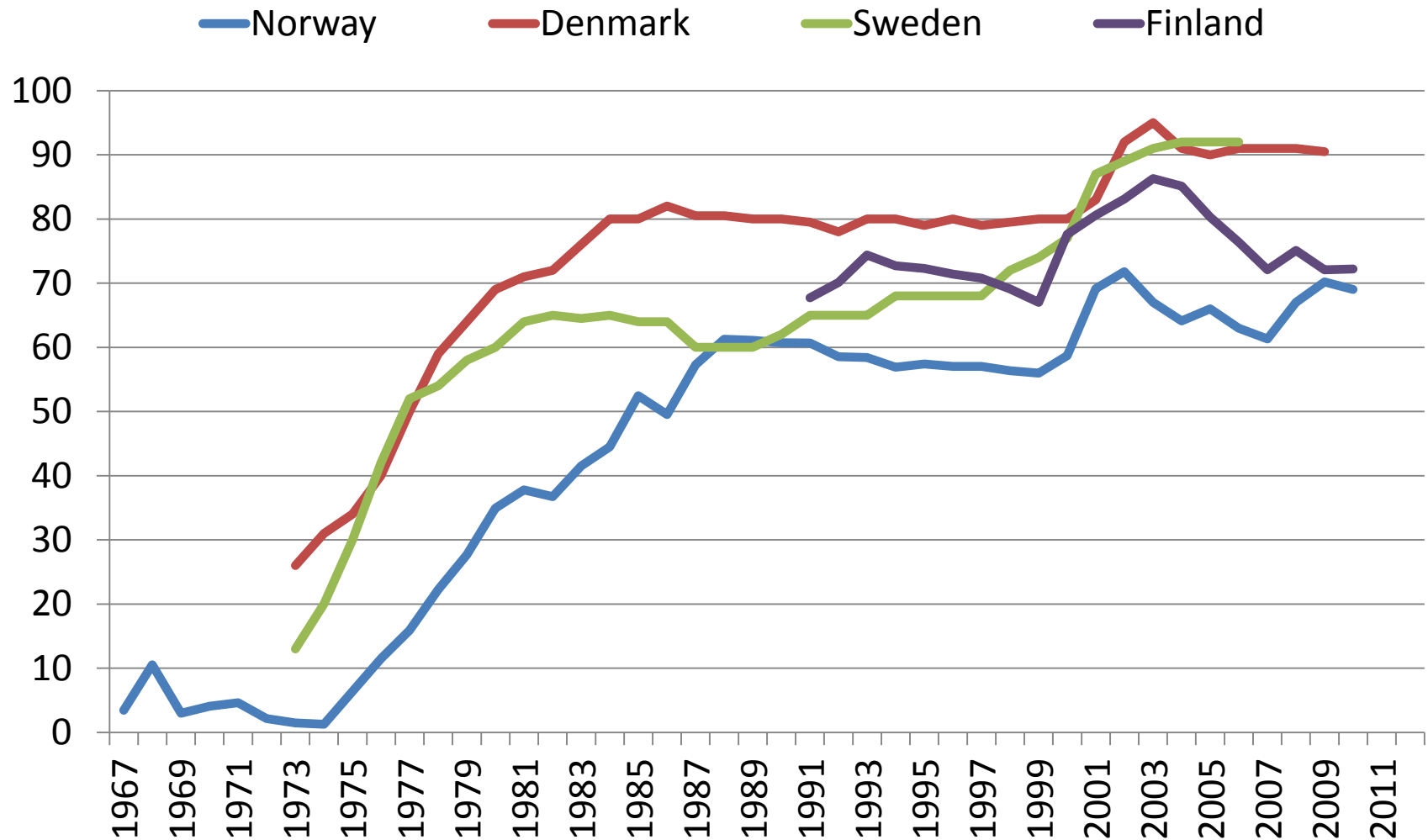
Haukeland University Hospital, Kvinneklirikken



Proportion of operative deliveries, Haukeland University Hospital



The proportion of cesarean section in breech presentation.



Factors associated with wish for cesarean section on maternal request

- Fear of childbirth
 - prevalence 5-40%
- Age
- Previous cesarean section
- Previous birth injury
- Sexual abuse
- Previous stillbirth or injured infant related to pregnancy or delivery
- Psychiatric illness
- Other reasons (practical reasons)

Counselling

Patient-specific issues:

- Comorbid medical conditions
- Body mass index
- Future reproductive plans
- Prior childbirth experiences
- Outcome of previous surgical procedures
- Patients personal philosophy about childbirth

Benefits and disadvantages of cesarean section

Benefits of cesarean delivery

- Known endpoint
- Avoidance of postterm pregnancy
- Reduced risk of postpartum hemorrhage
- Reduced risk associated with unplanned surgery
- Prevention of late stillbirth
- Reduction in nonrespiratory neonatal disorders
- Reduced risk of pelvic floor injury

Disadvantages and risk of cesarean delivery

- Longer recovery period
- Increased maternal morbidity
- Increased risk of respiratory problems in offspring
- Increased neonatal mortality

The incidence of maternal complications in cesarean section

Ref: Pallasmaa et al. AOG 2010;89:896-902

Maternal complications	All cesarean sections (N=2496)
All complications	27,2 %
Hemorrhage	8,4 %
Intraoperative complications	4,4 %
Complications of anesthesia	4,3 %
Puerperal complications	20,2 %
Infections	10,5 %
Severe complications	10,4 %

Psychological aspects of cesarean section

- Primary outcome: physically healthy mother and infant.
- Secondary outcome: psychosocial outcome
 - Post partum depression
 - Maternal satisfaction with childbirth
 - Post-traumatic stress disorders
 - Mother – infant relationship
 - Feelings about future birth
 - Parents sexual relationship
 - Health behaviours: breastfeeding

Main themes in women's accounts of post-cesarean psychological distress

A sense of loss	Loss of idealized birth
	Loss of participation in the birth experience
	Loss of "being there" as baby enters the world
Interrupted relationships with baby	Feeling that the baby is not really theirs
	Feeling detached from baby
Altered identities	Feeling like a failure
	Feeling less of a women
	Feelings of abnormality

Main themes in women's accounts of post-cesarean psychological distress

Intimations of mortality	Fear for own life
	Fear for baby's life
Feelings of violation	Breaching of body boundaries
	Negative perceptions of scar
Anger at care-givers	Belief that cesarean was unnecessary
	Perceived lack of involvement in decisions
	Perceptions of inadequate support from care-givers

Risk in future pregnancies after c-section

- Increased risk of placenta previa and accreta
- Increased risk of uterine rupture
- Complications from multiple abdominal surgeries

Birth complications in second delivery cesarean vs vaginal

Jackson et al. AJOG 2012;206:139.e1-5)

Antepartum or labor complications	OR	95% CI
Uterine rupture	268	65,6 - 999
Placenta accreta	1,5	0,2 - 12,9
Placenta abruption	2,3	1,5 - 3,6
Placenta previa	1,5	0,8 - 2,6
Hysterectomi	28,8	3,1 - 263,8
Anemia	2,8	2,8 - 3,4
Postpartum hemorrhage	0,89	0,73 - 1,09

Birth

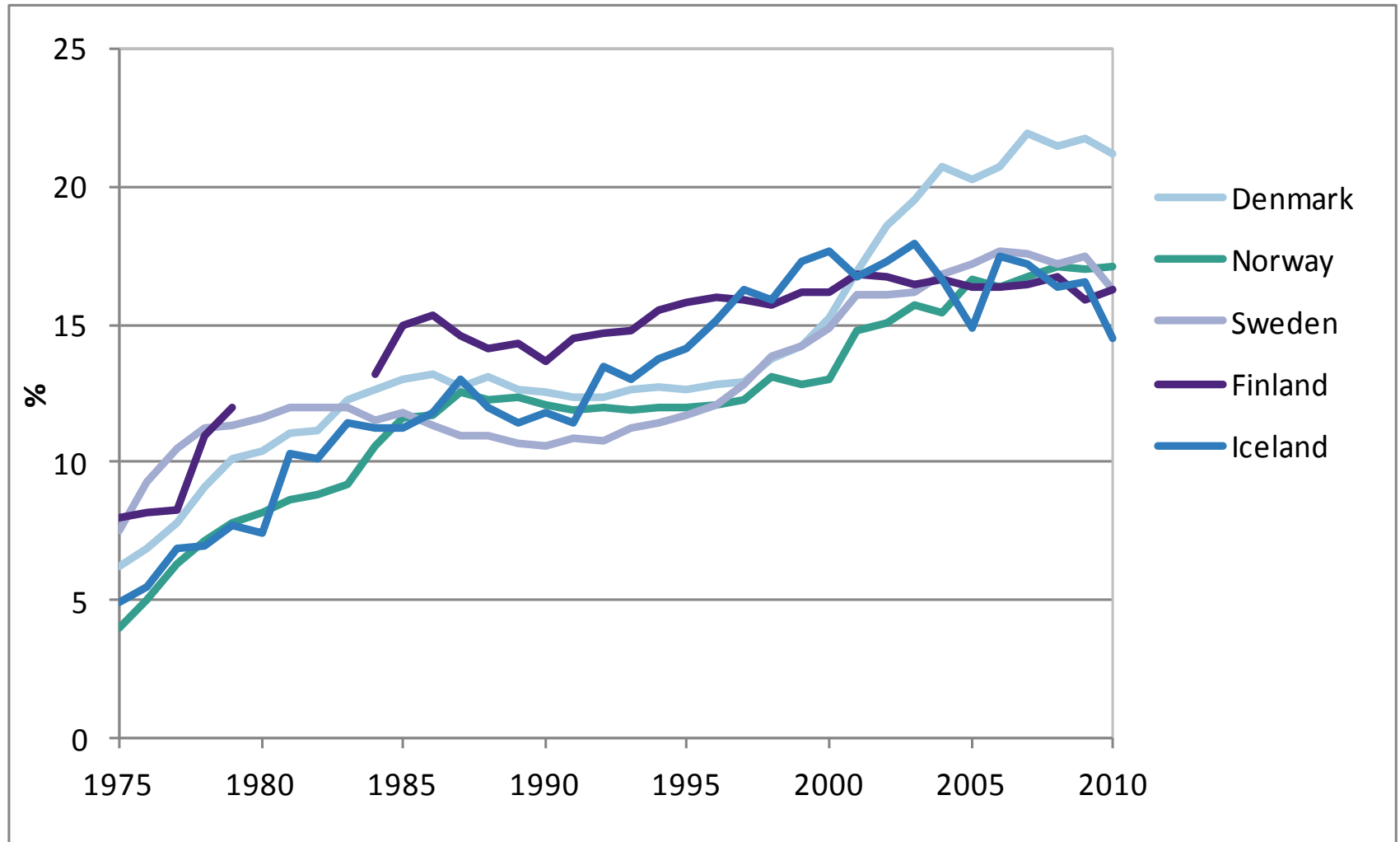
Normal vaginal birth:

Important programming event with life long-health consequences

Health harms of cesarean:

Growing evidence of a link between cesarean birth and future disease in the child: Type 1 diabetes, asthma, allergies, gastroenteritis, obesity.

Caesarean sections as a percentage of all deliveries 1975–2010, %



Source: THL, Nordic perinatal statistics

In conclusion

- Vaginal delivery remains the choice
- Disparities in the rates of cesarean section are an important issue because they are linked to pervasive racial-ethnic and socioeconomic disparities in maternity care.
- Obstetrical policies and practice patterns are the cause of different CS rates not the choices women make.