Bilaga till rapport

Kejsarsnitt på kvinnans önskemål – fördelar och nackdelar för kvinna och barn/Caesarean section on maternal request – risks and benefits for mother and child, rapport 343 (2022)

Bilaga 9 – Included health economic studies

Table 1 Economic evaluations comparing planned vaginal birth with caesarean section upon maternal request in primiparous women.

Author	National Institute for Health and Clinical Excellence
Year	2011
Reference	[1] Chapter 13.3
Country	England and Wales
Study design	CUA
	Time horizon: lifetime.
Population	
Setting	Primiparous women without an obstetric indication for CS.
Perspective	Not stated.
	National Health Service and personal social services.
Intervention vs control	Planned vaginal birth vs planned CS without obstetric indication for CS
Incremental cost	Total costs: 1 954 GBP (vaginal) vs. 2 664 GBP (CS); difference 710 GBP.
	Birth costs: 1 741 GBP (vaginal) vs. 2 365 GBP (CS).
	Adverse outcomes costs: 212 GBP (vaginal) vs. 299 GBP (CS).
	Costs reported in GBP year 2009/2010.
Incremental effect	51 448 QALYs (vaginal) vs. 51.418 QALYs (CS); incremental effect 0.030 QALYs.
ICER	Planned vaginal birth dominant (less costly and more effective) compared to planned CS.
	Probabilistic sensitivity analyses showed a 100% probability of planned vaginal birth being dominant.
	Scenario analysis including urinary incontinence as an adverse outcome changed results to 373 GBP/QALY for planned CS vs. planned vaginal birth.
Study quality and transferability**	Moderate quality.
	Moderate transferability to Sweden.
Further information	Decision tree.
	Outcomes by planned (rather than actual) mode of birth and their frequencies based on clinical review for the guideline. Costs incurred after the birth based on data from single largest study for respective outcome rather than pooled data.
	Short-term outcomes for the mother include vaginal birth injury, deep vein thrombosis, blood transfusion, early PPH, infection, anaesthetic complication, uterine rupture, intraoperation trauma, assisted ventilations or intubations, acute renal failure, cardiac arrest, and obstetric shock. For the child, short-term outcomes include intracranial haemorrhage, neonatal respiratory morbidity and NICU admission.
	Lifetime outcomes include maternal and neonatal mortality, hysterectomy for the mother and hypoxic-ischemic encephalopathy for the child.
	Urinary incontinence for the mother was not included in the base case analysis.
Comments	Limited amount of sensitivity analyses. Unclear method for selection of utility weights from the literature.

* Study quality is an assessment of the quality from an economic perspective (Appendix 4).

Abbreviations: CUA = Cost-utility analysis; CS = caesarean section; GBP = British pound; ICER = Incremental cost-effectiveness ratio; NICU = neonatal intensive care unit; PPH = postpartum haemorrhage; QALY = quality-adjusted life year

Table 2 Economic evaluations comparing planned vaginal birth with caesarean section upon maternal request after previous caesarean section.

Author **Year** **Reference** **Country**	Fawsitt et al. 2013 [2] Ireland
Study design **Population** **Setting** **Perspective**	CUA Time horizon: 6 weeks postpartum. Hypothetical cohort of low-risk women with previous caesarean section; low risk defined according to NICE 2007 guidelines on intrapartum care. Maternity hospitals. Healthcare system.
Intervention vs control	Trial of labour after caesarean (TOLAC) vs Elective repeat CS (ERCD)
Incremental cost	*Total costs per woman*: TOLAC EUR 1 835 vs. ERCD EUR 4 040 (difference EUR 2 205)* *Costs per woman and delivery method*: Successful TOLAC unassisted: EUR 628 Successful TOLAC ventouse: EUR 1 637 Emergency CS: EUR 4 423 ERCD: EUR 4 095** Costs reported in Euro year 2010.
Incremental effect	TOLAC 0.84 QALYs vs. ERCD 0.70 QALYs; difference 0.14 QALYs over 6 weeks. Quality of Well-Being preference weights (based on assumptions).
ICER	TOLAC dominates ERCD (less costly and more effective). In PSA analyses, the probability of TOLAC being cost-effective was 100 % when using a threshold of EUR 45 000 per QALY.
Study quality and transferability** **Further information** **Comments**	Moderate quality Moderate transferability to Sweden. Decision tree. Only includes short-term maternal complications (uterine rupture, hysterectomy, operative injury, blood transfusion, and endometritis). Model does not include thrombosis, urinary incontinence or wound infections. Unclear if CS on maternal request; however, based on low risk one can assume that population is relevant for project's research question. Use of normal distributions for costs and utilities in PSA leads to underestimation of uncertainty in PSA.

* Costs taken from text (Results and Abstract); slight difference to those reported in table.

** Difference vs. total costs of EUR 4040 in overall results not explained in article.

*** Study quality is an assessment of the quality from an economic perspective (Appendix 4).

Abbreviations: CUA = Cost-utility analysis; CS = caesarean section; ERCD = elective repeat caesarean delivery; EUR = Euro; ICER = Incremental cost-effectiveness ratio; NICE = National Institute for Health and Clinical Excellence; PSA = probabilistic sensitivity analysis; QALY = quality-adjusted life year; TOLAC = trial of labour after caesarean

Author **Year** **Reference** **Country**	Fobelets et al. 2018 [3] Belgium, Germany, Ireland, Italy
Study design **Population** **Setting** **Perspective**	CUA Time horizon: 6 weeks postpartum for short-term consequences and lifetime for long-term consequences Hypothetical cohort of low-risk women with previous caesarean section, without pre-existing medical conditions or risk factors. Singleton pregnancy. Previous CS performed using low uterine transverse incision. Hospital. Societal.
Intervention vs control	Planned vaginal birth after caesarean (VBAC) vs elective repeat CS (ERCD)
Incremental cost*	Belgium: -153 EUR (6 weeks), 14 EUR (lifetime) Germany: -33 EUR (6 weeks), 85 EUR (lifetime) Ireland: -662 EUR (6 weeks), -540 EUR (lifetime) Italy: -195 EUR (6 weeks), -66 EUR (lifetime) Costs reported in Euro year 2016.
Incremental effect*	Belgium: 0.075 QALYs (6 weeks), 0.004 QALYs (lifetime) Germany: 0.076 QALYs (6 weeks), 0.007 QALYs (lifetime) Ireland: 0.067 QALYs (6 weeks), 0.006 QALYs (lifetime) Italy: 0.064 QALYs (6 weeks), 0.004 QALYs (lifetime)
ICER	With 6-week horizon: VBAC dominates ERCD in all countries (less costly and more effective). With lifetime horizon: • Ireland and Italy: VBAC dominates ERCD (less costly and more effective) • Belgium: 3 669 EUR/QALY • Germany: 12 817 EUR/QALY In PSA analyses, the probability of VBAC being cost-effective was 100 % for a 6-week horizon using country specific thresholds (Belgium 36 633 EUR/QALY; Germany 37 719 EUR/QALY; Italy 27 219 EUR/QALY; Ireland 45 000 EUR/QALY). Over a lifetime horizon, VBAC was the preferred strategy for 98.7 % (Belgium) and 100 % (Germany, Ireland and Italy) of all simulations.
Study quality and transferability**	Moderate quality. Moderate transferability to Sweden (most likely for results from Belgium and Ireland, as high frequency of CS in Germany and Italy).
Further information	Decision tree. Country-specific discount rates used based on local guidelines. Decrements from country-specific utility weights by age groups. For calculation of disutility's, neonatal outcomes and mode of birth assumed to be independent. Health economic analysis for Germany, Ireland and Italy based on data from international multicentre trial. Maternal complications included uterine rupture, endometritis, peripartum hysterectomy, blood transfusion, thrombotic events, operative injury, wound complications, and mortality. Neonatal outcomes were accounted for via health state of the mother and included hypoxic ischemic encephalopathy, sepsis, respiratory conditions, and mortality; cerebral palsy was included as a long-term consequence.
Comments	Unclear if CS on maternal request; however, based on low-risk one can assume that population is relevant for project's research question.

* Incremental cost and effect per woman calculated based on cohort results from article.

** Study quality is an assessment of the quality from an economic perspective (Appendix 4).

Abbreviations: CUA = Cost-utility analysis; CS = caesarean section; ERCD = elective repeat caesarean delivery; EUR = Euro; ICER = Incremental cost-effectiveness ratio; PSA = probabilistic sensitivity analysis; QALY = quality-adjusted life year; VBAC = vaginal birth after caesarean.

Referenser

1. Caesarean section (NICE clinical guideline 132). London: The Royal College of Obstetricians and Gynaecologists (RCOG). National Institute for Health and Care Excellence (NICE); 2011. [accessed Oct 26 2021]. Available from: https://www.rcog.org.uk/en/guidelines-research-services/guidelines/caesarean-section-nice-clinical-guideline-132/.
2. Fawsitt CG, Bourke J, Greene RA, Everard CM, Murphy A, Lutomski JE. At what price? A cost-effectiveness analysis comparing trial of labour after previous caesarean versus elective repeat caesarean delivery. PLoS ONE [Electronic Resource]. 2013;8(3):e58577. Available from: https://doi.org/10.1371/journal.pone.0058577.
3. Fobelets M, Beeckman K, Faron G, Daly D, Begley C, Putman K. Vaginal birth after caesarean versus elective repeat caesarean delivery after one previous caesarean section: a cost-effectiveness analysis in four European countries. BMC Pregnancy Childbirth. 2018;18(1):92. Available from: https://doi.org/10.1186/s12884-018-1720-6.