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Review

Intrapartum care policies in high-income countries with a universal health system: A scoping review

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ABSTRACT

Evidence-based and sustainable intrapartum care policies are essential for safer, effective, and positive birth experiences. This scoping review aimed to map intrapartum care policies for pregnant women at low-risk of complications, in high-income countries with a universal health system. The study followed Joanna Briggs Institute methodology for scoping reviews and PRISMA-ScR. Search was conducted on CINAHL-EBSCO, Scopus, MEDLINE-Pubmed, Cochrane Central Register of Controlled Trials-EBSCO, and, Academic Search Complete-EBSCO. Grey literature was searched, references screened and experts contacted for additional studies/policies. Data were extracted/analysed by two independent reviewers and results were presented in tabular and narrative format. The concept was governmental intrapartum care policies, the context were OECD high-income countries with a health-financing system founded on the Beveridge Model and the participants were low-risk pregnant women From the 561 records screened, 22 were selected, concerning intrapartum care policies from Australia, Denmark, Spain, Finland, Portugal, and the United Kingdom. All the included records were retrieved in the grey literature. No intrapartum care governmental policies were found for Greece, Iceland, Italy, New Zealand, Norway, and Sweden. Some countries do not refer to all the analysed care aspects and there are differences in detail, depth, range, and scientific. The policies show general similarities but differ in the timing and the content of the recommended intrapartum care. Not all of the analysed countries have intrapartum care policies and those who have shown differences between recommendations. These results can be used to create/revise intrapartum care policies.

Background

During the last century maternal, fetal, and neonatal mortality has globally decreased [1].

Evidence has provided important guidance for intrapartum care that leads to the best perinatal outcomes, and high-income countries have been developing policies for safer, sustainable, effective, and positive birth experiences.

However, the amount of time needed to disseminate and implement evidence into practice is worryingly high [2].

Nowadays, even though more mothers' and babies' lives are saved, there has been an increased concern about morbidity, physical and psychological disability, in the short and long-term [3]. Normal birth has been associated with better perinatal outcomes and its prevalence varies between contexts [4], different care models [5], different care settings [6], and different care interventions [4,7].

As an example, continuity-midwifery-led models of care (compared to medical-led or shared models) are associated with more spontaneous vaginal births, less use of regional analgesia, episiotomy, and instrumental delivery, greater woman's satisfaction, and similar perinatal

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adverse outcomes [5]. *The Birthplace in England* prospective cohort study also showed differences in intervention rates between intrapartum care settings [6]. Low-risk nulliparous women giving birth in the United Kingdom (UK) midwifery-led units (MLU), freestanding or alongside, had a greater prevalence of normal birth (with less instrumental vaginal births, cesarean sections, and episiotomies), than those giving birth in obstetric units (OU). The same applied to low-risk multiparous women giving birth at home or in MLU.

One of the reasons for these differences could be the lack of governmental scientific-based policies, essential to support decisions, plans, actions, and quality of care, as well as to facilitate the implementation of evidence-based practice [8].

Previous research has mapped antenatal care policies for low-risk pregnant women in high-income countries with a universal health system [9] but, to the author's knowledge, no review has explored intrapartum care policy in this context.

This scoping review aims to map the available evidence on the nature, extent, and range of intrapartum care policies, for pregnant women at low risk of complications, in high-income countries with a universal health system. For this review, intrapartum care was considered as all health care provided to women and their babies during labour and immediately after birth [10].

This review is part of a series of studies that contribute to a research project in midwifery intrapartum care practices to promote normal birth in the Portuguese context, where a low prevalence of normal birth prevails [4]. Nevertheless, the results can be used by any country that seeks to evaluate intrapartum care practices in its own context, by helping to identify lack of guidance in certain clinical practices as well as challenge and reflect on cultural practices versus best evidence. Similarly, this review can also be used to create indicators for intrapartum care in different countries.

Review questions

This review was based on the following review questions:

a) Who provides intrapartum care to pregnant women who are at low-risk of complications?
b) What places of birth are available to pregnant women who are at low-risk of complications?
c) What care is recommended at each stage of labour for pregnant women who are at low-risk of complications?

Inclusion criteria

The participants of this scoping review are pregnant women at low-risk of complications, meaning women who have no identified risk factors for themselves or their babies, and appear to be healthy [3].

The concept was governmental policies, protocols, and guidelines on intrapartum care. Non-governmental intrapartum care guidance was excluded from this review.

Finally, the context was high-income countries of the Organisation for Economic Cooperation and Development [11] with a universal health care system based on the Beveridge Model [12]: Australia, Denmark, Finland, Greece, Iceland, Ireland, Italy, New Zealand, Norway, Portugal, Spain, Sweden, and the UK [13].

The review examined both quantitative and qualitative studies, including randomized controlled trials, non-randomized controlled trials, quasi-experimental studies, before and after studies, prospective and retrospective cohort studies, case-control studies and cross-sectional studies, systematic reviews, ethnography, and action research. Information from official governmental websites was also considered. The authors excluded opinion papers, newspaper articles, non-governmental documents, and articles without available full text.

Methods

This study followed the Joanna Briggs Institute methodology for scoping reviews [14] and PRISMA-ScR [15]. The review was guided by the original protocol, which was previously developed, registered (https://osf.io/hgn7z), and published [16].

Ethical approval was not required for this review since it is a secondary analysis of public documents [17].

The search strategy for published studies had no language restrictions nor date limitations, and was carried out on the main databases CINAHL (EBSCO), Scopus, MEDLINE (Pubmed), Cochrane Central Register of Controlled Trials (EBSCO), and, Academic Search Complete (EBSCO) on 7th December 2021. Appendix I provides an example of the search strategy. Additionally, two independent authors screened through grey literature, governmental websites (ministries of health and departments of health of the included countries), and contacted field experts (academics, politicians, and health departments), ensuring information sources were exhausted.

The records were uploaded into Mendeley v.1803 and duplicates were removed. Two reviewers screened through the records (Fig. 1).

Data was extracted and analysed by two independent reviewers using a previously tested data extraction tool (Appendix I).

Results and discussion

A total of 539 records were identified through database searching, with an additional 22 from grey literature. Duplicates were removed (n = 296), and after the title and abstract screening, 233 records were excluded. Thirty-two full-text records were assessed for eligibility, and 10 were excluded, resulting in a total of 22 records included for review (Fig. 1).

Two difficult decisions emerged when selecting documents for review: whether to include regional government policies, amending the initial Scoping Review protocol [16]; and whether to accept the document "Pelo Direito ao Parto Normal – Visão Partilhada" [For the right to normal birth – shared vision] [18], since it was a document endorsed by the Portuguese Department of Health, but it was not intituled as an official national guide. With third reviewer support, the following decisions were made: due to the lack of national intrapartum government policies from many of the analysed countries, the initial protocol was amended to include regional government policies; the Portuguese document "Pelo Direito ao Parto Normal – Visão Partilhada" was included since it was endorsed by the Portuguese Department of Health and lists recommendations to promote normal birth.

The review identified the intrapartum care policies of Australia, Denmark, Spain, Finland, Portugal, and the United Kingdom (UK) [18,19,28–37,20,38,39,21–27] (Table 1). Australia does not have a national policy, but regional policies have been found for five of its eight territories: Queensland [39], Victoria [38], South Australia [25–28], Western Australia [31–37], and the Australian Capital Territory [29,30]. After a thorough literature search and contact with field experts, the authors did not find any official governmental intrapartum care guidance for the following countries: Greece, Iceland, Italy, New Zealand, Norway, Republic of Ireland, and Sweden, nor for the Australian territories of Tasmania, Northern Territory, and New South Wales.

WHO recommendations on intrapartum care [3,40,41] were used as reference along with the discussion of the findings of this review. For aspects omitted in the WHO guidance, the latest available research was used.

Who provides intrapartum care?

The authors investigated the health professionals delivering intrapartum care and the main model of care referred to in each document.

All countries (except for Finland, which is omissive) recommend midwifery one-to-one care, for intrapartum care of women who are at

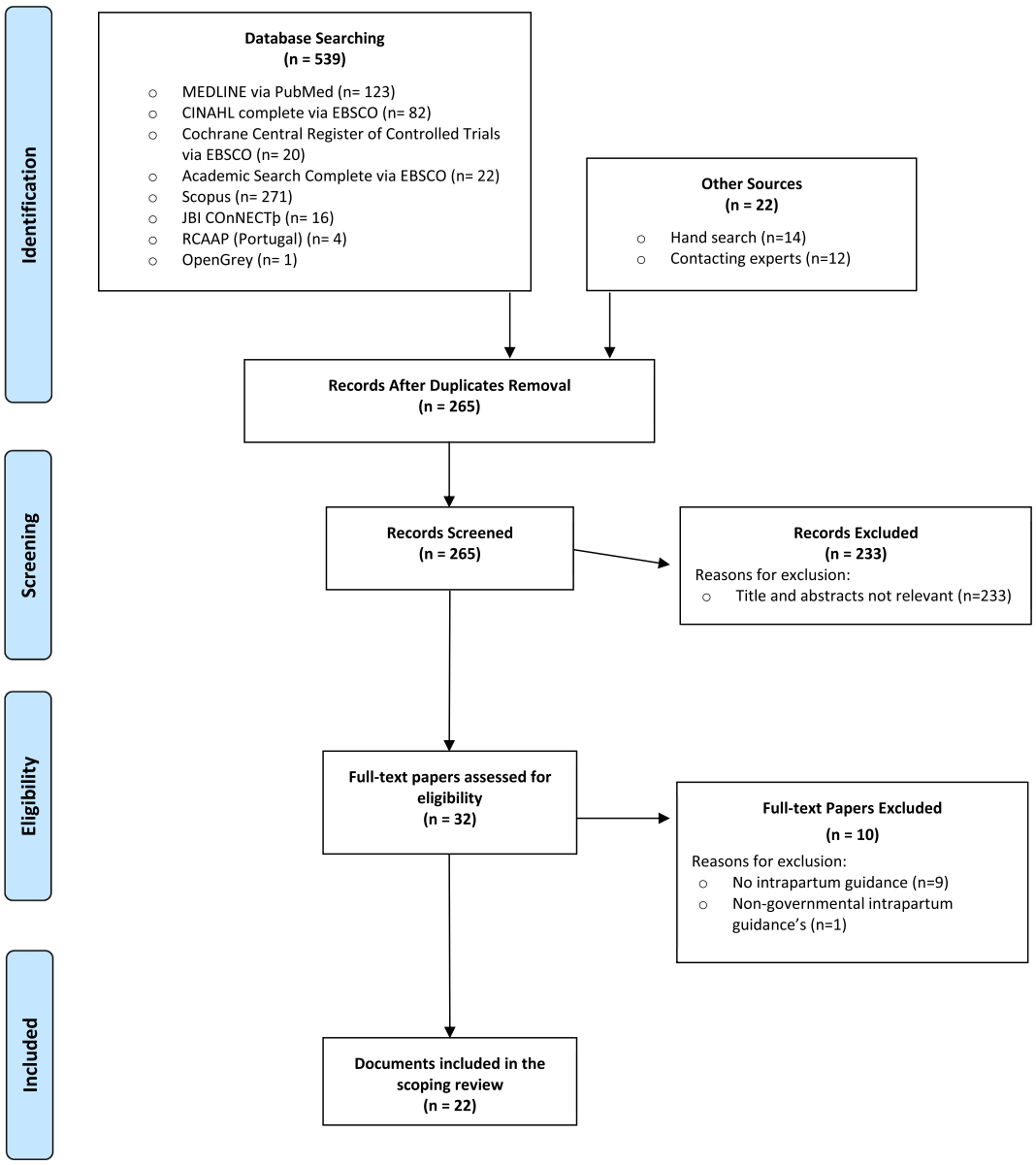

Figure 1. Flow diagram of literature search, study selection, and inclusion/exclusion process, modified from PRISMA (Moher et al., 2009).

low risk of complications. Additional care by an obstetrician and/or neonatologist was referred to in situations of risk/complications with the woman or babýs health.

Additionally, all the analysed Australian Territories recommend continuity of care, and Queensland territory and Portugal refer to continuity of carer. Subsequently to the latest update of the UK intrapartum care guidance, the Long Term Plan [42] recommends midwifery continuity of care to be the default model of care available to all pregnant women in England. Indeed, the latest intrapartum guidance by WHO [3] recommends midwife-led continuity-of-care models in settings with well-functioning midwifery programmes.

What places of birth are available?

Available places of birth are not referred to by Queensland, Victoria, and Portugal. Finland's policy refers to maternity hospitals throughout the document but does not specify whether midwifery-led units (MLU), hospital obstetric units (OU), or both, though it has a chapter on homebirth.

Australia, Denmark, Spain, and the UK refer to the following birth places: Home, MLU, and OU. Spain mentions that homebirth is only available by private health services. High-quality scientific research conducted in the UK evaluated birth outcomes at different birth settings (home, in-hospital, and out-of-hospital MLU, and OU) for multiparous and nulliparous women at low-risk of complications [6]. The results revealed that planning birth in an out-of-hospital MLU is particularly suitable as the rate of interventions is lower than in OU, and the perinatal outcomes are not different when compared.

What care is recommended at each stage of labour?

Australia, Spain, and the UK policies specifically define the following stages of labour, in accordance with WHO [3]: Latent first stage - irregular painful contractions, cervical effacement, and dilatation less than 4–6 cm; Active first stage - regular painful contractions, cervical effacement and dilatation of at least 4–6 cm; Latent second stage - full cervical dilatation without the urge to push; Active second stage - full cervical dilatation and the baby is visible or there is an urge to push; and Third stage - from the birth of the baby to the expulsion of the placenta.

Generally, policies recommend:

Table 1
Characteristics of the 22 documents accepted for review.

Year	Author	Country	Documents
2018	Queensland Health	Australia	Maternal and Neonatal
2021	Victorian Agency for	Australia	Clinical Guideline: Normal
2019	Health Information	Australia	Birth
2018	Western Australia North	Australia	Care during labour and
2021	Metropolitan Health	Australia	birth
2019	Service		Labour: First Stage
2016	Western Australia North	Australia	Second stage of labour and
	Metropolitan Health	Australia	Birth
2019	Service		Labour: Third Stage
2021	Western Australia North	Australia	Partogram
2019	Metropolitan Health	Australia	Postnatal: Immediate
2014	Service	Australia	Maternal Care in Labour
2021	Western Australia North	Australia	and Birth Suite following
	Metropolitan Health	Australia	Birth
2021	Service		Pain Management
2020	Western Australia North	Australia	Perineal care and repair
2021	Metropolitan Health	Australia	Labour: Care During First,
	Service	Australia	Second and Third Stage
			Labour: Perineal Care-
	Western Australia North		Maternity
	Metropolitan Health		Labour and Birth Care.
	Service		Routine care in normal
	Western Australia North		labour and birth
	Metropolitan Health		Perineal Care and Repair
	Service		Analgesia for Labour and
	Australian Capital		Birth (Pharmacological)
	Territorial Health		Postnatal Care Routine
	Australian Capital		care of the well woman and
	Territorial Health		neonate
	Government of South		
	Australia		
	Government of South		
	Australia		
	Government of South		
	Australia		
	Government of South		
	Australia		
2021	Sundhedsstyrelsen	Denmark	Anbefalinger for
	[Danish Department of		svangreomsorgen
	Health]		[Recommendations for
			maternity care]
2016	Terveyden ja	Finland	Edistä, ehkäise, vaikuta –
	hyvinvoinnin laitos		Seksuaali- ja
	[Finish Department of		lisääntymisterveyden
	Health and Welfare]		toimintaohjelma
			2014–2020. [Promote,
			prevent, influence – Sexual
			and reproductive health
			action programme]
20,122,020	Pinheiro, A.; Catarino,	Portugal	Documento de Consenso
	G.; Leite, L.; Freitas, J.;		Pelo Direito ao Parto
	Marques,R.		Normal – uma visão
		Portugal	partilhada [For the right to
	Direção Geral de Saúde		normal birth – shared
	[Portuguese Department		vision]
	of Health]		Cursos de Preparação para
			o Parto e Parentalidade –
			CPPP e Cursos de
			Recuperação Pós-Parto –
			CRPP [Pre natal and post
			natal classes]
2010	Ministerio de Sanidad y	Spain	Guia de Prática Clínica
	Politica Social [Spanish		Sobre Cuidados com o
	Ministry of Health and		Parto Normal [Normal
	Social Policies]		birth intrapartum
			guidelines]
20,172,014	National Institute for	United	Intrapartum care – Care of
	Health and Care	Kingdom	healthy women and their
	Excellence	United	babies during childbirth
		Kingdom	(summary update)
	National Institute for		Intrapartum care for
	Health and Care		healthy women and babies
	Excellence		- Clinical Guideline (full
			guidance)

- Assessing the womanś emotional coping, discomfort, and pain
- Using partograms.
- Admitting the woman in active labour.
- Promoting the presence of a birth companion of the womanś choice.
- Promoting eating and drinking.
- Encouraging the woman to move and adopt different positions during labour.
- Encouraging and monitoring the frequency of urine voiding.
- Performing urinalysis.
- Not routinely using oxytocin or perform amniotomy.
- Not routinely siting intravenous access.
- Not performing routine enema or trichotomy.

All these recommendations are aligned with WHÓs latest guidance [41 3 40].

Regarding eating and drinking during labour, some documents advise encouraging eating according to the womańs wishes (Denmark, South Australia, Capital Territory of Australia, and Queensland), some specifically recommend a light diet (the UK and Western Australia) and Queensland, Spain, the UK, and Western and South Australian territories refer to the benefits of drinking other fluids rather than water, such as isotonic carbohydrate-rich drinks. According to the WHO [43] (p.21) "the routine administration of IV fluids for all women in labour is not recommended, given that it reduces women's mobility and unnecessarily increases costs". Furthermore, it recommends that women are encouraged to eat a light diet and drink as they wish during labour. The ingestion of carbohydrate-rich drinks compared with low-carbohydrate beverages seems to relieve maternal hunger and reduce neonatal hypoglycemia, without any effect on cesarean rates [44].

Concerning the womańs positioning during labour, Denmark, Victoria, South Australia, and the UK specifically say that the supine position should be discouraged, which is also aligned with the latest WHO recommendations [3].

Portugal and Finland are omissive about the assessment of the womańs discomfort, her pain levels, and her ability to emotionally cope; Finland and Victoria are omissive about the use of partograms, and Finland is also omissive about eating and drinking during labour.

Australia and the UK are the only countries recommending urinalysis and the monitoring of the frequency of urine voiding during labour, with the Australian policies further recommending the encouragement of at least 2 hourly voidings, which is supported by WHO guidance [3].

Routine amniotomy or oxytocin use is specifically not recommended by the Capital Territory of Australia, Denmark, Portugal, Spain, and the UK. The WHO [45] warns that the inadequate use of oxytocin or amniotomy can cause damage to both the woman and the fetus and therefore should not be routinely performed.

Most policies also refer to water birthing as an option for women at low-risk of complications (except for Portugal, Finland, and Victoria, which are omissive). A 2021 retrospective study from the UK found positive perinatal outcomes associated with waterbirths, such as reduced incidence of postpartum haemorrhage and neonatal unit admissions, with no association with low Apgar score or an increase of obstetric anal sphincter injury incidence [46].

The UK and Spain say that since there is no evidence to support the use of sterile gowns, sterile packs, or vulval cleansing before vaginal examination or vaginal birth in reducing maternal or neonatal morbidity, the perineum should only be cleaned with tap water, if needed.

Regarding fetal assessment, the policies recommend:

- Performing abdominal palpation
- Asking the woman about fetal activity
- Implementing intermittent fetal heart rate monitoring, rather than routine cardiotocography and continuous monitoring.

These recommendations are aligned with WHO guidance [3,41,43].

Australian territories and the UK are the only ones recommending asking about fetal activity at admission and performing abdominal palpation every 2–4 h, or before each vaginal examination.

Portugal and Finland are omissive about fetal heart rate monitoring during labour. All the other documents recommend fetal heart rate monitoring for at least 60 s every 15 to 30 min during the first stage, and after each contraction (or at least every 5 min) during the second stage. Queensland, Capital Territory and South Australia guidance specify different fetal heart rate monitoring for latent first stage, when admitted: Queensland recommends it every 4 h, Capital Territory every 2 h, and South Australia every hour. For active first stage, they all recommend it every 15 to 30 min (the same as the other countries in this study). Queensland and Capital Territory also differentiate fetal heart rate monitoring for latent and active second stage. During the latent second stage of labour, Queensland recommends fetal heart rate monitoring every 15 min and Capital Territory every 15 to 30 min. At active second stage, the recommendation is the same as the other countries: to monitor fetal heart rate after each contraction, or at least every 5 min.

Western and South Australian territories specify that each auscultation episode should commence towards the end of a contraction and be continued for at least 30 to 60 s after it has terminated. These are similar to WHÓs recommendations, which additionally highlight the importance of differentiating fetal from maternal heart rate [3].

Table 2 summarises maternal monitoring assessment for all regions.

There are several differences in the recommended frequency for monitoring temperature, respiratory rate, heart rate, and blood pressure.

Spain only refers to maternal temperature monitoring in the context of water immersion or epidural, and to blood pressure monitoring in case of epidural or nitrous oxide and oxygen oral gas mixture (50%/50%) inhalation. It does not mention respiratory and heart rate monitoring.

Concerning maternal vital signs monitoring, Australia and the United Kingdom suggest temperature and blood pressure checks every 4 h during the active first stage. All the Australian territories additionally recommend respiratory rate monitoring every 4 h. The United Kingdom also advises respiratory rate monitoring, but only in the context of the first hour after birth.

Finally, maternal pulse monitoring recommendations varies between countries, from every 15 min to every 4 h. Denmark, Finland and Portugal are omissive regarding maternal pulse monitoring. The United Kingdom recommends it every hour. Queensland and Capital Territory are the only ones referring to maternal pulse monitoring during latent first stage, if admitted, recommending it every 4 h. Western Australia, South Australia and Spain recommend taking maternal pulse along with each fetal heart rate monitoring, to differentiate it, reducing the risk of mistakenly taking maternal heart rate for fetal heart rate, which is aligned with WHO recommendations [3]. For third stage, all Australian Territories, except Queensland (which is omissive) recommend monitoring maternal heart rate during the first hour after birth.

Table 2
Maternal monitoring/assessment recommendations.

	Temperature	Respiratory rate	Heart Rate	Blood Pressure	Vaginal Loss	Vaginal Exams	Contractions
Queensland	4/4h	1st Latent 4/4h (if admitted); 1st Active 30/30 min; no mention about 2nd or 3rd	1st Latent 4/4h; 1st Active 30/30 min; no mention about 2nd or 3rd	4/4h	1st 1/1h and 2nd; Latent; 2nd Active continuously 3rd 15/30 min during the first two hours after birth	4/4h	1st Latent 4/4h; 1st Active 30/30 min; no mention about 2nd; 3rd continuously
Victoria	1st 4/4h; 2nd 1/1h 3rd after delivery of the placenta, during the first hour after birth	1st 4/4h; 2nd 1/1h; 3rd after delivery of the placenta, during the first hour after birth	1st 30/30 min; 2nd 15/15min 3rd 15/15 min during the first hour after birth	1st 4/4h; 2nd 1/1h; 3rd after delivery of the placenta, during the first hour after birth	1st and 2nd 30/30 min; 3rd 15/15 min during the first hour after birth	4/4h	1st and 2nd 30/30 min; 3rd 15/15 min during the first hour after birth
Western Australia	1st and 2nd 4/4h; 3rd during the first hour after birth	1st and 2nd 4/4h; 3rd during the first hour after birth	With each FHR monitoring 1st 15/30 min; 2nd 5/5min; 3rd during the first hour after birth	1st 4/4h; 2nd 1/1h; 3rd during the first hour after birth	1st and 2nd continuously; 3rd 15/30 min until 2 h after birth	1st 4/4h; 2nd 1/1h	1st and 2nd 30/30 min; 3rd 15/15 min during the first two hours after birth
Capital Territory	4/4h	1st Latent 4/4h (if admitted); 1st Active 30/30 min; no mention about 2nd; 3rd continuously during the first hour after birth	1st Latent 4/4h (if admitted); 1st Active 30/30 min; 2nd 15/15 min; 3rd after delivery of the placenta during the first hour after birth	1st Latent 4/4h (if admitted); 1st Active 2/2h; 3rd after delivery of the placenta	1st Latent 2/2h; 1st Active 30/30 min; 3rd continuously	1st 4/4h; 2nd (to confirm full dilation)	1st Latent 2/2h; 1st Active 30/30 min; no mention about 2nd or 3rd
South Australia	4/4h during 1st and 2nd; 3rd – 15/15 min during the first hour after birth	1st Latent 4/4h (if admitted); 1st Active 1/1h; no mention about 2nd; 3rd 15/15 min during the first hour after birth	With each FHR monitoring 1st 15/30 min; 2nd 5/5min; 3rd 15/15 min during the first hour after birth	1st 4/4h; 2nd 1/1h; 3rd 15/15 min during the first hour after birth	1 h/1h	4/4h	1st Latent 1/1h; 1st Active 30/30 min; no mention about 2nd or 3rd
Denmark	No mention	No mention	1rst: every 15–30 min 2nd: every 5 min	No mention	No mention	No mention	No mention
Finland	No mention	No mention	No mention	No mention	No mention	No mention	No mention
Portugal	No mention	No mention	No mention	No mention	No mention	No mention	No mention
Spain	1/1h if water immersion or epidural	No mention	With each FHR monitoring 1st 15/30 min; 2nd 5/15 min	If epidural or Nitrous Oxide and Oxygen (50%/50%) inhalation	No Mention	4/4h	No Mention
United Kingdom	4/4h	3rd during the first hour after birth	1 h/1h	1st 4/4h; 2nd 1/1h	1st 4/4h; 2nd 1/1h; 3rd continuously	1st 4/4h; 2nd 1/1h	30/30 min

Legend: 1st – first stage of labour; 2nd – second stage of labour; 3rd – third stage of labour; h – hours; min – minutes; FHR – Fetal heart rate
Note: Some guidance specify different intrapartum care for active and latent phases within first and second stages of labour, while some do not.

The WHO [41] recommends monitoring temperature, heart rate, and blood pressure every 4 h during labour as well as during the first hour after birth, but is omissive regarding routine respiratory rate monitoring for low-risk pregnant women in labour. The authors did not find evidence to support or contradict this additional recommendation.

Generally, policies refer to vaginal examinations every 4 h to determine dilatation and extinction of the cervix, as well as to determine fetal position, and to monitor the frequency and duration of uterine contractions every 30 min during the active first stage (Table 2). This is aligned with WHÓs recommendations(41). Additionally, the Capital Territory of Australia recommends doing a vaginal exam at the second stage to confirm full dilatation when nulliparas feel the urge to push or when multiparas are pushing for 15 min and the fetus is not yet visible. WHO does not refer to the need for any additional vaginal exam at the second stage of labour and the authors did not find evidence to support or contradict this additional recommendation.

There are variabilities regarding vaginal loss monitoring between policies (Table 2). The WHO [41] refers to monitoring amniotic fluid loss and characteristics every 30 min during the active first stage and monitoring vaginal blood loss at admission, and during the third stage.

Regarding comfort and pain relief strategies for labour, some women wish to maintain total sensitivity during their childbirth experience. Others prefer to combine pharmacological and non-pharmacological strategies to achieve a certain level of pain control, and some wish to eliminate pain. The WHO [3] recommends manual techniques (such as massage or the application of warm packs) and relaxation techniques (including progressive muscle relaxation, breathing, music, mindfulness, and others) for non-pharmacological pain relief during labour. Considering other non-pharmacological options, the WHO also highlights the variation between settings and contexts, and includes water immersion, acupuncture, hypnobirthing, or any specific cultural and traditional practices that comfort women [(p.106)]. Table 3 lists the options for comfort and pain relief mentioned in the analysed documents.

Most policies mention transcutaneous electrical nerve stimulation (TENS), immersion in water, breathing, relaxation, and massage techniques as options for comfort and pain relief during labour. However, Spain and the UK do not recommend the use of TENS during the active phase of labour, arguing that the evidence has not proven its effectiveness for pain relief during this stage of labour. A recently published randomized study [47] found a positive association between the use of TENS and a shorter active labour phase as well as reduced pain perception during labour.

Some policies also mention hypnosis, acupuncture, aromatherapy, reflexology, and music therapy as available options. However, Western Australia does not recommend reflexology, unless done by a specialized therapist and only after the woman signs a written consent form. The reasons for this are not stated. Spain says that although there is scientific evidence for the benefits of hypnosis, music therapy, and acupuncture, these techniques are not used in their context.

The South Australian care policy is the only one that mentions the application of warm compresses as an option for comfort and pain relief during labour, which is aligned with the WHO recommendation [3].

As for pharmacological options for pain relief, most regions refer to epidural analgesia, intramuscular administration of opioids, and oral inhalation of a mixture of nitrous gas and oxygen (50%/50%).

WHO [3] states that the most frequently used pharmacological options for pain relief during labour are epidural and opioids. Epidural analgesia is associated with ~~a~~ greater pain relief but requires more resources to implement and manage, it has more adverse effects, and is unable to be reversed in the short term.

Some regions propose a fourth option: sterile water injections. However, the UK does not recommend it, claiming that there is a lack of evidence for its purported benefits and potential side effects. A study published in 2022 found that women felt pain relief after sterile water abdominal injection, with minimal adverse side effects [48].

Regarding care during the active second stage of labour, most

Table 3
Strategies of comfort and pain relief.

	Hypnoses	Aromatherapy	Reflexology	Musicotherapy	Acupuncture	Transcutaneous electrical nerve stimulation	Water Immersion	Breathing Relaxation Massage	Epidural and Combined Spinal-Epidural Analgesia	Intramuscular Opioids	Nitrous Oxide and Oxygen Oral Gas Mixture (50%/50%)
Queensland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Victoria	No mention	No mention	No mention	No mention	No mention	No mention	No mention	No mention	No mention	No mention	No mention
Western Australia	Yes	Yes (external use only)	Not Recommended	Yes	Yes	Yes	Yes	Yes	Yes	No mention	Yes
Capital Territory	No mention	No mention	No mention	No mention	No mention	Yes	Yes	Yes	Yes	No mention	No mention
South Australia	Yes	Yes	No mention	No mention	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Denmark	No mention	No mention	Yes	No mention	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Finland	No mention	No mention	No mention	No mention	No mention	No mention	No mention	No mention	No mention	No mention	No mention
Portugal	No mention	No mention	No mention	No mention	No mention	No mention	Yes	No mention	Yes	No mention	No mention
Spain	Not used	No mention	No mention	Not used	Not used	Not for the active phase	Yes	Yes	Yes	Yes	Yes
United Kingdom	Yes	Yes	No mention	Yes	Yes	Not for the active phase	Yes	Yes	Yes	Yes	Yes

policies recommend encouraging spontaneous pushing efforts. Spain adds that pushing should be guided if the woman has an epidural. However, the latest WHO [3](p5) guidance states that "for women with epidural analgesia in the second stage of labour, delaying pushing for one to two hours after full dilatation or until the woman regains the sensory urge to bear down is recommended in the context where resources are available for a longer stay in the second stage and perinatal hypoxia can be adequately assessed and managed".

The WHO [3]p.5 recommends the use of "techniques to reduce perineal trauma and facilitate spontaneous birth (including perineal massage, warm compresses, and a "hands-on" guarding of the perineum)" and does not recommend a routine or liberal use of episiotomy.

Routine episiotomy is specifically not recommended by all regions, except for Finland and Queensland which are omissive. Australia and the UK recommend both hands-on or hands-poised techniques for perineal support during fetal expulsion. Spain only refers to the hands-on approach. Australia and Spain recommend applying warm compresses on the perineum during expulsion, but the United Kingdon say that this technique is not effective in preventing perineal trauma. Both Spain and the UK do not recommend perineal massage during the second stage of labour. However, the WHO [3](p.139) says that "perineal massage may increase the chance of keeping the perineum intact and reduces the risk of serious perineal tears, [and] that warm perineal compresses reduce third- and fourth-degree perineal tears".

Portugal, Denmark, and Finland are omissive regarding the third stage of labour intrapartum care recommendations.

Regarding placental delivery, Spain, Australia, and the UK all recommend and advise active management of the third stage instead of passive management, with the administration of 10UI of oxytocin. Spain recommends its administration to be intravenous whilst the others refer to the intramuscular route. All recommend controlled cord traction and Western Australia is the only guidance recommending routine uterine massage after the delivery of the placenta to prevent post-partum haemorrhage (every 15 min, during the first hour).

According to the WHO [3], the use of Oxytocin (10UI, IM/IV) for the prevention of postpartum haemorrhage during the third stage of labour is recommended for all births. It also states that controlled cord traction can be offered, if skilled birth attendants are available, and "the care provider and the woman regard a small reduction in blood loss and a small reduction in the duration of the third stage of labour as important" [3] (p.161). It ceased to recommend routine uterine fundus massage whenever uterotonic was administered, as there are no clear benefits of its effectiveness in reducing postpartum haemorrhage, emphasising, however, that surveillance of uterine tone after delivery remains essential for optimising the early diagnosis of postpartum haemorrhage.

Victoria's government policy also states that passive management of the third stage of labour in water should not be performed, though it does not say the reasons for this. The authors did not find evidence regarding the management of waterbirth during the third stage of labour.

Some authors are proposing physiological management [49] as a third option for placental delivery, rather than active or passive management, involving immediate skin-to-skin contact and breastfeeding as tools to prevent or minimize the incidence of post-partum haemorrhage.

Regarding perineal repair (when necessary), absorbable synthetic suture material, with a continuous subcuticular technique, is recommended by most policies (Spain, UK, Western Australia, Capital Territory, and South Australia) which are also supported by the WHO(3), since it is associated with less pain and the use of less suturing material than interrupted suture [50].

Finally, the author analysed the intrapartum care recommendations regarding baby care (Table 4).

Almost all policies recommend monitoring the babýs temperature, determining APGAR scores at 1 and 5 min, keeping the baby warm with a dry blanket or towel, and encouraging skin-to-skin contact with the mother as well as breastfeeding as soon as possible after birth (preferably during the first hour), as recommended by the WHO [3].

Routine suction of the babýs airway is specifically not recommended by Spain and the UK. High-quality evidence suggests that routine airway suction in normal and healthy babies may be associated with lower APGAR levels and oxygen saturations [51](p. 26).

Finland and Portugal were omissive on the recommended minimum waiting time before cord clamping. The other countries vary in their recommended times (Table 4) with minimum times ranging from 30 to 60 s and maximum times ranging from 2 to 5 min. The WHO [3] recommends that cord clamping and cutting is not done before the first minute of a babýs life, suggesting an ideal timing of 1 to 3 min. It also notes that, in addition to the increased probability of cases of hyperbilirubinemia not associated with adverse clinical outcomes, there are no known adverse effects of prolonging cord-cutting beyond this time.

Conclusions

Well-developed, evidence-based policies are fundamental to guarantee safe and quality care to women and babies.

Not all high-income countries with a universal health system have

Table 4
Babýs monitoring/assessment recommendations.

	Minimal waiting time before umbilical cord clamping	Monitoring temperature	APGAR Evaluations at 1min and 5 min	Routine Air Way Suction	Keep Warm with a dry blanket or towel	Encourage baby and mother together, skin-to-skin and breastfeeding as soon as possible
Queensland	1–3 min	During first hour of life	Recommended	No mention	Recommended	Recommended
Victoria	1–3 min	Recommended	Recommended	No mention	Recommended	Recommended
Western Australia	1–3 min	1/1h until 3 normal values	Recommended	No mention	Recommended	Recommended
Capital Territory	1–5 min	No mention	No mention	No mention	No mention	Recommended
South Australia	1–5 min	1/1h until 4 h after birth	Recommended	No mention	Recommended	Recommended
Denmark	30 s – 2 min	No mention	Recommended	No mention	No mention	Recommended
Finland	No mention	No mention	Recommended	No mention	No mention	Recommended
Portugal	No mention	No mention	No mention	Not recommended	No mention	Recommended
Spain	2 min	During first hour of life	Recommended	Not recommended	Recommended	Recommended
United Kingdom	1–5 min	During first hour of life	Recommended	Not recommended	Recommended	Recommended

Legend: h – hours; min – minutes

intrapartum care policies.

The analysed policies show general similarities but differ in specific aspects related to the timing and the content of the recommended intrapartum care. Some countries do not refer to all the analysed care aspects and there are differences in detail, depth, range, and the scientific basis of the recommendations between policies.

The variability found should not be explained by major differences between the countries (as they are comparable) but are likely to be associated with differences in culture and context-related practice.

The results of this study can be used by any country to revise their own intrapartum care practices, develop or update national policies, and revisit the evidence upon which care is provided.

CRediT authorship contribution statement

Isabel Maria Ferreira: Conceptualization, Methodology, Data curation, Formal analysis, Writing – original draft. **Andreia Soares Gonçalves:** Data curation, Formal analysis, Writing – original draft. **Márcia Pestana-Santos:** Visualization, Investigation, Methodology, Writing – review & editing. **Maria Margarida Leitão Filipe:** Supervision, Validation, Visualization, Writing – review & editing. **Laetitia da Costa Teixeira:** Supervision, Validation, Visualization, Writing – review & editing. **Emília de Carvalho Coutinho:** Supervision, Validation, Visualization, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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