



Compliance with the Baby-friendly Hospital Initiative for Neonatal Units (Neo-BFHI)

A cross-sectional study in 36 countries

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and the Neo-BFHI Study Group



Disclosure statement

The authors have no relationships to disclose relevant to this topic.



Background

- Historically neonatal units present barriers to breastfeeding.
- The Neo-BFHI Guiding Principles and Ten Steps were published in 2012-13 and the standards and recommendations in 2015.
- Breastfeeding-related policies and practices in neonatal units are not well documented internationally, only Denmark and Spain have performed national surveys (Maastrup 2012, Alonso-Diaz 2016).

The Baby-friendly Hospital Initiative for Neonatal Wards or Neo-BFHI	
Three Guiding Principles	
Guiding Principle 1	Staff attitudes toward the mother must focus on the individual mother and her situation.
Guiding Principle 2	The facility must provide family-centered care, supported by the environment.
Guiding Principle 3	The health care system must ensure continuity of care from pregnancy to after the infant's discharge.
Expanded Ten Steps to Successful Breastfeeding	
Step 1	Have a written breastfeeding policy that is routinely communicated to all health care staff.
Step 2	Educate and train all staff in the specific knowledge and skills necessary to implement this policy.
Step 3	Inform hospitalized pregnant women at risk for preterm delivery or birth of a sick infant about the benefits of breastfeeding and the management of lactation and breastfeeding.
Step 4	Encourage early, continuous and prolonged mother-infant skin-to-skin contact/ Kangaroo Mother Care.
Step 5	Show mothers how to initiate and maintain lactation, and establish early breastfeeding with infant stability as the only criterion.
Step 6	Give newborn infants no food or drink other than breast milk, unless medically indicated.
Step 7	Enable mothers and infants to remain together 24 hours a day.
Step 8	Encourage demand breastfeeding or, when needed, semi-demand feeding as a transitional strategy for preterm and sick infants.
Step 9	Use alternatives to bottle feeding at least until breastfeeding is well established, and use pacifiers and nipple shields only for justifiable reasons.
Step 10	Prepare parents for continued breastfeeding and ensure access to support services/groups after hospital discharge.
Compliance with the International Code of Marketing of Breast-milk Substitutes	

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Three Guiding Principles

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Expanded Ten Steps to Successful Breastfeeding

Step 1	Have a written breastfeeding policy that is routinely communicated to all health care staff.
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Step 3	Inform hospitalized pregnant women at risk for preterm delivery or birth of a sick infant about the benefits of breastfeeding and the management of lactation and breastfeeding
Step 4	Encourage early, continuous and prolonged mother-infant skin-to-skin contact/ Kangaroo Mother Care.
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Compliance with the International Code of Marketing of Breast-milk Substitutes

Neo-BFHI Package

Edition 2015



<http://www.ilca.org/main/learning/resources/neo-bfhi>

Aim

- **Aim of the survey:** Measure compliance with the Neo-BFHI's three Guiding Principles (GPs), Ten Steps to Successful Breastfeeding and the Code in neonatal units globally.
- **Aim of the presentation:** Describe Neo-BFHI compliance internationally with a focus on skin-to-skin contact and parents' possibility for presence and caring.

Methods - I

- Principal investigators: Ragnild Maastrup, Denmark and Laura N. Haiek, Quebec, Canada.
- Country survey leaders in each country enrolled the units and ensured the data collection.
- Survey using a Self-Assessment questionnaire, based on the Neo-BFHI Self-Appraisal Tool.
- 15 different languages, most online.
- Pilot-tested in Quebec, Denmark, UK and France.

Methods - II

- Data collected from February to December 2017.
- All levels of neonatal units were eligible to participate.
- Sent to head nurse or medical director of neonatal wards.

Analysis

Partial and Overall Compliance scores:

- Based on 63 indicators for the GPs, Steps and Code
- Mean scores for each ward presented in a benchmark report
- Country (regional) and International scores presented as median scores



Calculation of scores for each GP, Step and the Code for an individual units

Range 0 - 100

Step 8 (Neonatal expansion)

Encourage demand breastfeeding or, when needed, semi-demand feeding as a transitional strategy for preterm and sick infants.

Your score

50

Original BFHI Step 8: Encourage breastfeeding on demand.



	Indicators	Ideal Response	Your Response	Points	Score Algorithm				
S8_1	S8_1 The individual infant's ability and stability – not a certain gestational/postnatal/postmenstrual age or weight – indicates when it is possible to discontinue scheduled feedings and tube feedings.	Always	Always	100	0 = Never	25 = Rarely	50 = Half the time	75 = Frequently	100 = Always
S8_2	S8_2 Routine supplementation with fixed volumes of milk at scheduled times (for infants who can't feed at the breast) is discontinued when the infant is able to obtain milk at the breast and replaced by a feeding plan based on the individual infant's breastfeeding behavior.	Always	Rarely	25	0 = Never	25 = Rarely	50 = Half the time	75 = Frequently	100 = Always
S8_3	S8_3 Mothers receive guidance from staff on how to recognize their infants' feeding cues and behavioral changes in order to help determine when it is appropriate to breastfeed.	Always	Half the Time	50	0 = Never	25 = Rarely	50 = Half the time	75 = Frequently	100 = Always
S8_4	S8_4 Medications are administered and procedures (such as blood tests, eye exams, medical imaging) are scheduled so as to cause the least possible disturbance to breastfeeding.	Always	Rarely	25	0 = Never	25 = Rarely	50 = Half the time	75 = Frequently	100 = Always
Your neonatal ward				50	Score (Mean of 4 indicators)				

Calculation of scores for each GP, Step and the Code for an individual ward

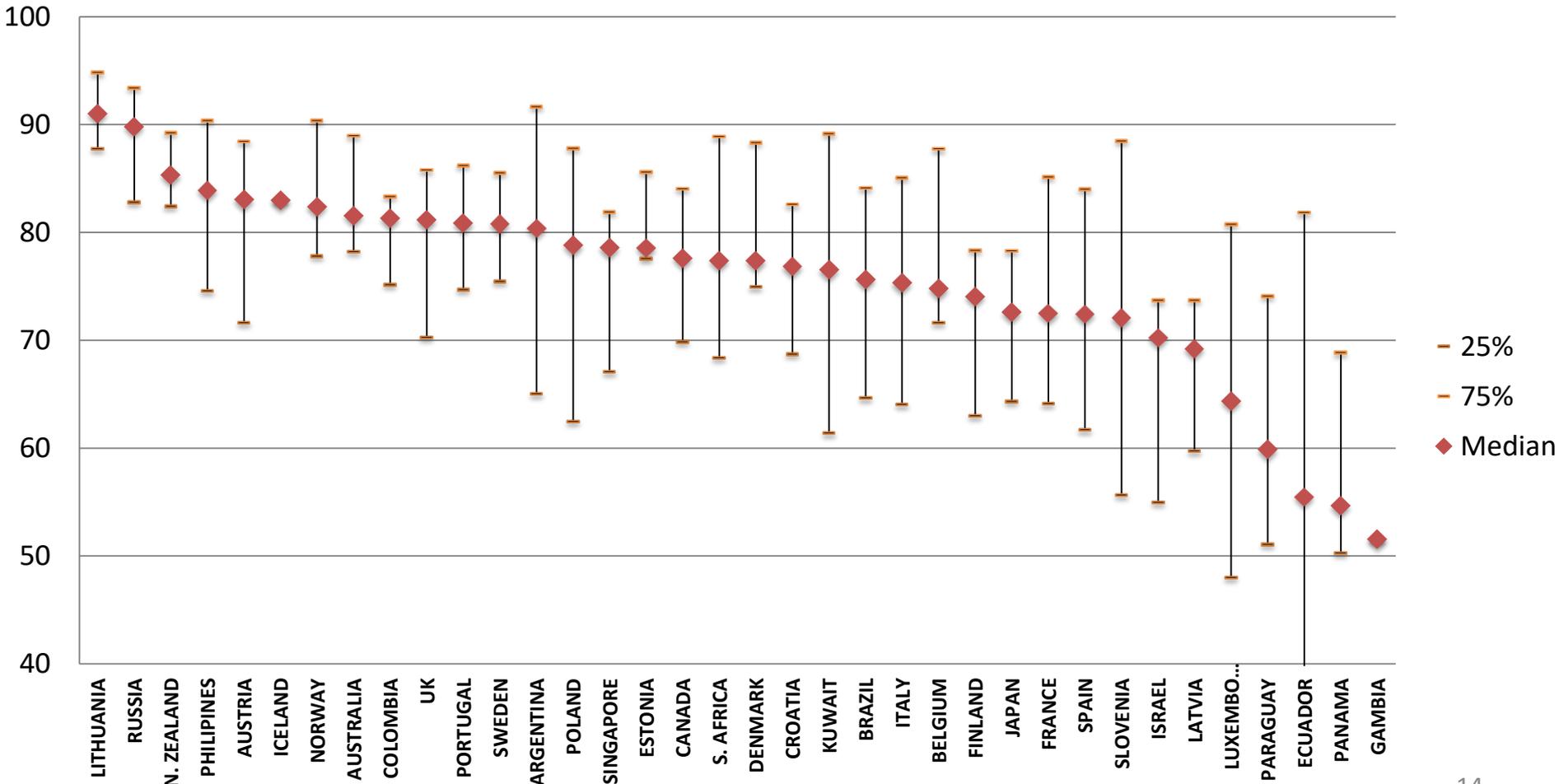
Range 0 - 100

Your unit	50	Score (Promedio de 6 indicadores)
España	79	Score (Mediana para unidades con el mismo nivel de atención)
Internacional	81	Score (Mediana para unidades con el mismo nivel de atención)

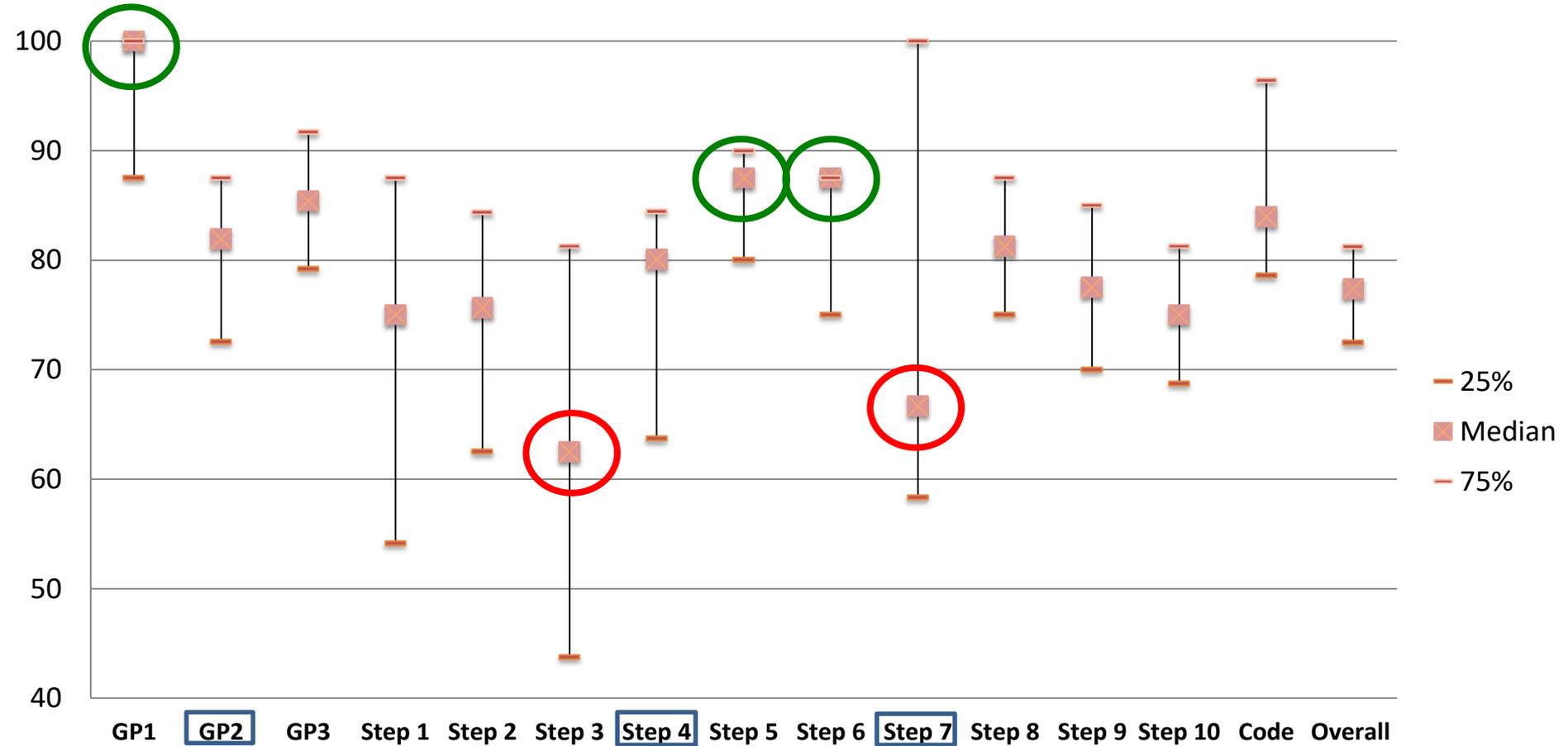
Results

International median score 77

Country Overall scores (medians)



International median of countries' median Partial scores

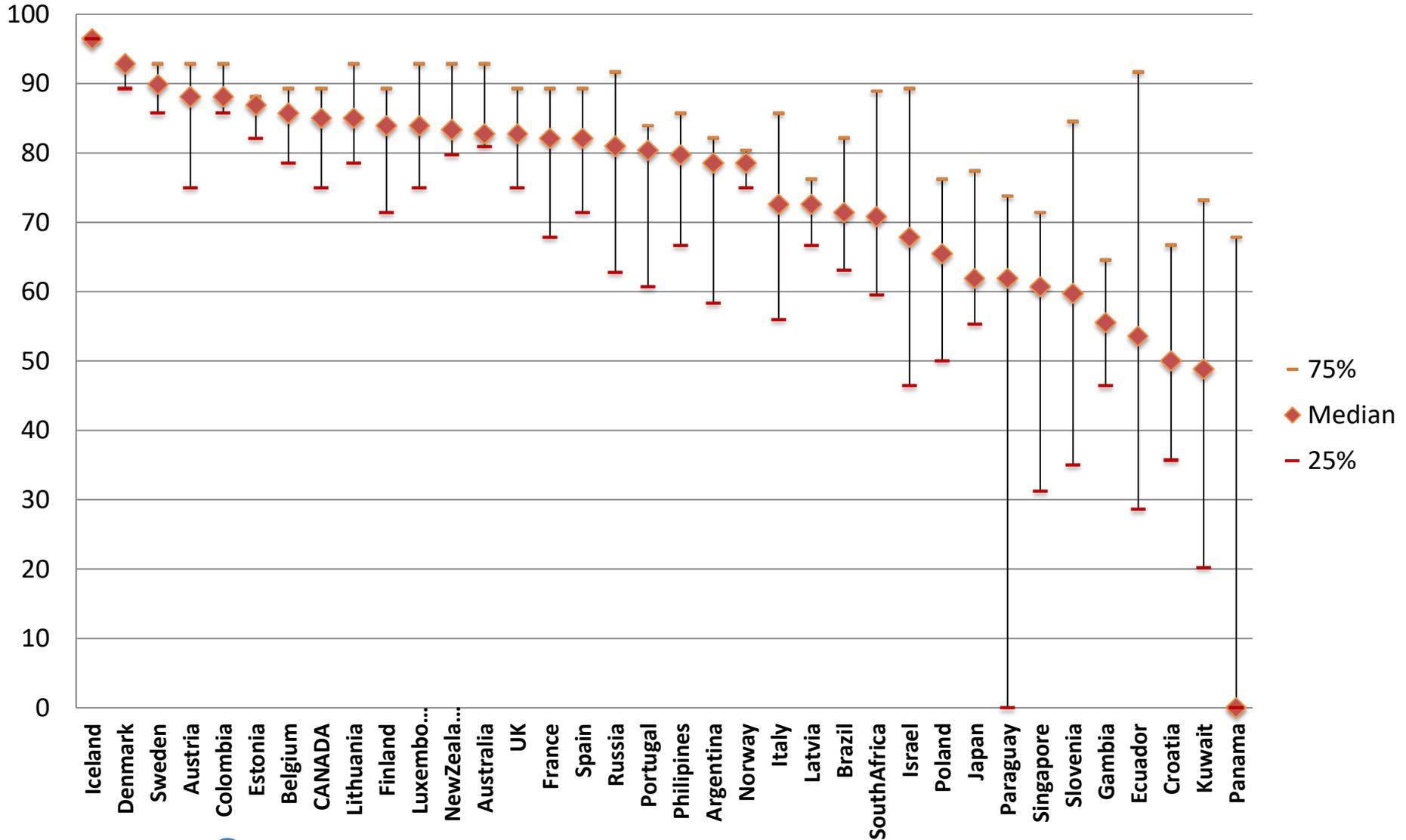


Step 4 (Neonatal expansion)

Encourage early, continuous and prolonged mother-infant skin-to-skin contact (Kangaroo Mother Care) without unjustified restrictions.

- Partial International median score 80 (IQR 64-84, range 0 - 96) variation based on countries' median scores.

Country Step 4 scores (median, IQR)



Significant differences in Step 4 scores for income, BFHI status and KMC program

- High-income country
median 79 (95% CI 74.0 – 83.8)
versus low and middle-income country **median 63**
(95% CI 48.3 – 77.7) (p=0.0091)
- Units in a hospital ever designated BFHI:
mean 77 (SD 19)
versus never designated BFHI **mean 72** (SD 23)
(p=0.0004)
- Units with a KMC program:
mean 79 (95% CI 77.2 – 81.7)
versus no KMC program **mean 72**
(95% CI 70.2 – 73.6) (p<0.0001)

Step 4 KMC

International median score 80

Indicators	Answers (%)	
S4_1 Infants are placed in skin-to-skin contact/kangaroo position with their mothers or fathers in your neonatal ward.	No 4 %	Yes 96 %
S4_2 Your hospital has a delivery ward/room.		
S4_3 The next statements address stable preterm infants, that is, born at 28 weeks or more of gestation without severe physiological instability associated with routine care and handling.	N = 845 (Place infants STS and has a delivery room)	
S4_3a <u>Stable preterm infants born vaginally</u> : \ most often initiate skin-to-skin contact with their mothers (fathers as a substitute) for the first time in your hospital/neonatal ward: 1. Immediately or within 5 minutes after birth. (Optimal) 2. During the first hour after birth (after the first 5 minutes but during the first hour). 3. During the 2nd to 24th hour of life (later than 1 hour after the birth, but during the first day of life). 4. After the first day. 5. Infants born at 28 to 33 weeks gestation are never cared for in your ward on the first days of life.	28 - 33 weeks 1 = 10% 2 = 13% 3 = 23% 4 = 31% 5 = 19% No stst = 4%	34-36 weeks 1 = 44% 2 = 22% 3 = 15% 4 = 9% 5 = 6% No sts = 4%

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Step 4 KMC

International median score 80

Indicators	Answers (%)
<p>S4_4 Infants are born by caesarean section performed without general anesthesia (i.e., using spinal or epidural anesthesia) in your hospital.</p>	<p>N = 810 (Place infants STS and perform CS spinal/epidural)</p>
<p>S4_5 Stable preterm infants born by <u>cesarean section</u> without general anesthesia at 34 to less than 37 weeks of gestation initiate skin-to-skin contact with their mothers (fathers as a substitute) for the first time in your hospital/neonatal ward:</p> <ol style="list-style-type: none"> 1. Immediately or within 5 minutes after birth. (Optimal) 2. During the first hour after birth (after the first 5 minutes but during the first hour). 3. During the 2nd to 24th hour of life (later than 1 hour after the birth, but during the first day of life). 4. After the first day. 5. Infants born at 34 to less than 37 weeks gestation are never cared for in your ward on the first days of life. 	<p>1 = 21%</p> <p>2 = 30%</p> <p>3 = 22%</p> <p>4 = 13%</p> <p>5 = 10%</p> <p>No sts = 4%</p>

Step 4 KMC

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Step 4 KMC

International median score 80

Indicators	Answers (%)				
S4_6 An initially <u>unstable preterm</u> infant is placed in skin-to-skin contact/kangaroo position in your neonatal ward as soon as the infant tolerates transfer back and forth from the mother.					
S4_6a Infants born at less than 28 weeks gestation.	Never 16	Rarely 12	Half the time 5	Frequently 14	Always 17
S4_6b Infants born at 28 to 33 weeks gestation.	Never 10	Rarely 10	Half the time 8	Frequently 22	Always 29
S4_6c Infants born at 34 to less than 37 weeks gestation.	Never 6	Rarely 9	Half the time 6	Frequently 26	Always 45
S4_7 Stable infants are allowed to remain in skin-to-skin contact/kangaroo position in your neonatal ward continuously, or for as long and as often every day as the parents are able and willing to.	No 16	Yes 84			

Step 4 KMC

International median score 80

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Step 4 KMC

International median score 80

	Indicators	Answers (%)
	S4_8 In general, how many hours per day are stable preterm infants in skin-to-skin contact/kangaroo position with their parents in your ward (please estimate the total amount of hours by adding the duration of all episodes that a stable preterm infant typically spends in skin-to-skin contact/kangaroo position on a given day)?	
S4_8	S4_8 1. Less than 1 hour per day 2. From 1 hour to less than 2 hours per day 3. From 2 hours to less than 4 hours per day 4. From 4 hours to less than 6 hours per day 5. From 6 hours to less than 8 hours per day 6. From 8 hours to less than 12 hours per day 7. From 12 hours to less than 20 hours per day 8. 20 hours and more per day	1 = 5% 2 = 13% 3 = 26% 4 = 21% 5 = 14% 6 = 10% 7 = 4% 8 = 2% No sts = 4%
S4_9	S4_9 Mothers are encouraged to continue providing skin-to-skin contact/KMC for stable infants throughout their hospital stay.	Never Rarely Half the time Frequently Always No sts 1 4 6 24 60 4

Step 4 KMC

International median score 80

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	S4_8 In general, how many hours per day are stable preterm infants in skin-to-skin contact/kangaroo position with their parents in your ward (please estimate the total amount of hours by adding the duration of all episodes that a stable preterm infant typically spends in skin-to-skin contact/kangaroo position on a given day)?	
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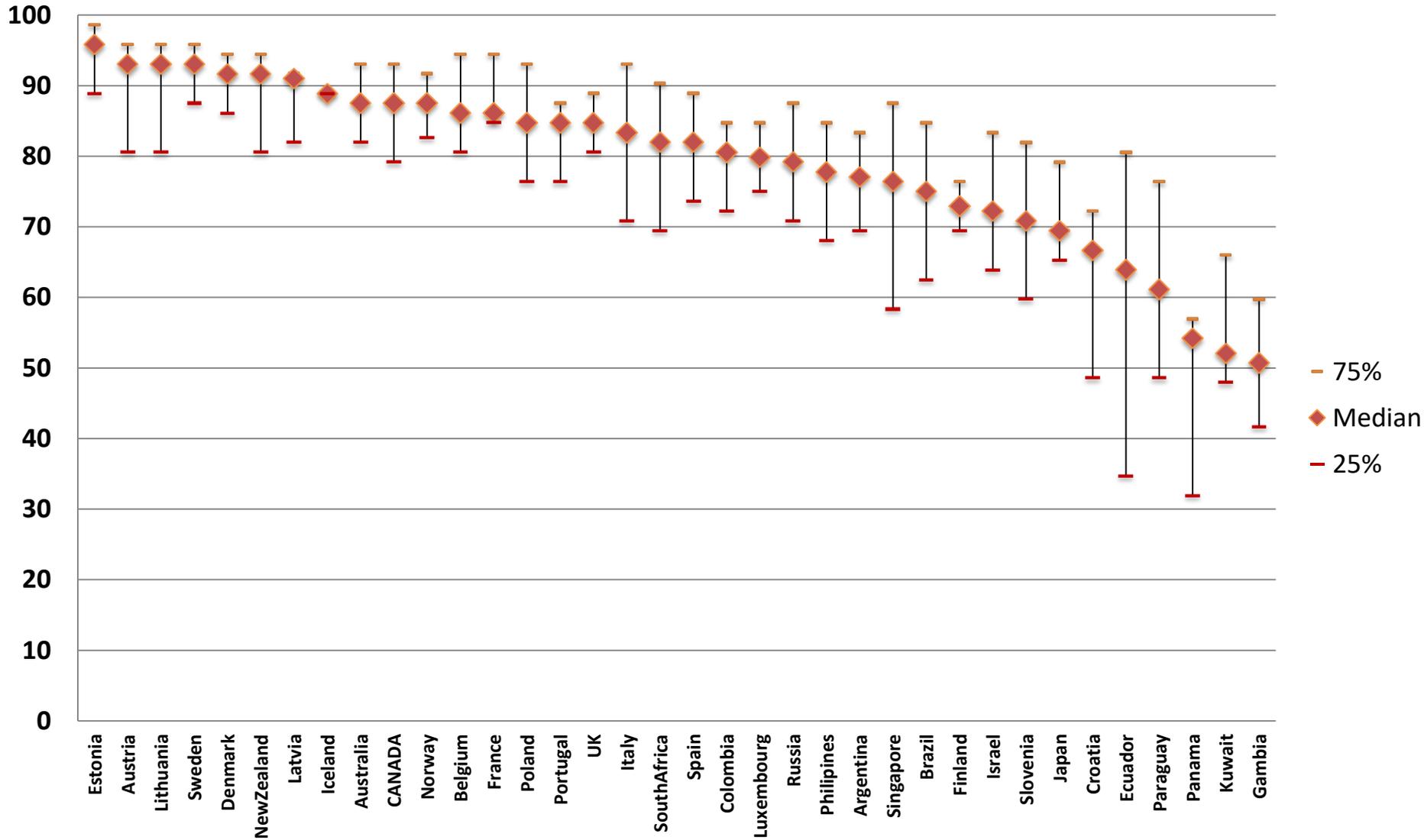
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Guiding principle 2

**The facility must provide family-centered care,
supported by the environment.**

- Partial International median score 82
(IQR 73-88, range 51 - 96)
variation based on countries' median scores.

Country Guiding Principle 2 scores (median, IQR) – Family-centered Care



Significant differences in GP2 scores for income and BFHI status

- High-income country:
median 83 (95% CI 79.1–87.7)
versus low and middle-income country
median 71 (95% CI 63.8 – 78.3)
($p=0.0023$)
- Units in a hospital ever BFHI designated:
mean 81 (SD 14)
versus never BFHI designated
mean 78 (SD 16)
($p=0.0038$)

Guiding Principle 2

International median score 82

Indicators	Answers (%)				
<p>GP2_1 The clinical staff know how family-centered care is integrated in their neonatal ward. Central aspects of family-centered care are respect and dignity, information sharing, participation, and collaboration.</p>	None 0	Not many 3	About half 9	Many 42	All 46
<p>GP2_2 Your neonatal ward is open 24 hours a day, 7 days a week, without restrictions:</p>					
<p>GP2_2a To mothers.</p>	No 11	Yes 89			
<p>GP2_2b To fathers/partners.</p>	No 25	Yes 75			
<p>GP2_3 Parents begin to participate in their infants' care within the first 24 hours after the birth.</p>	None 4	Not many 12	About half 8	Many 41	All 35

Guiding Principle 2

International median score 82

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Guiding Principle 2

International median score 82

	Indicators	Answers (%)				
GP2_4	GP2_4 Mothers are able to rest by their infants' bedside in the neonatal ward:					
	GP2_4a On a bed/mattress. (Optimal)	Never 54	Rarely 9	Half the time 4	Frequently 10	Always 23
	GP2_4b On a chair with armrests or on a reclining chair.					Always 35
	GP2_4c On a chair without armrest.					Always 10
		Never 5	27% sometimes something			68%

- 68% always bed/mattress, recliner or chair.
- 5% never bed/mattress, never recliner, and never chair (49 wards from 12 countries)

GP2_4b answered by 692 but divided by the total of 896 answers for GP2_4a

GP2_4c answered by 381 but divided by the total of 896 answers for GP2_4a

Guiding Principle 2

International median score 82

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Guiding Principle 2

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Guiding Principle 2

International median score 82

	Indicators	Answers (%)				
GP2_5	GP2_5 Mothers are able to eat close to your neonatal ward (no matter who provides the food).	Never	Rarely	Half the time	Frequently	Always
	GP2_5a Able to eat in the ward. (Optimal)	44	5	2	9	40
	GP2_5b Able to eat very close to the ward (5 minutes walking distance or less).	5	2	1	11	41
	GP2_5c Able to eat close to the ward (6 to 10 minutes walking distance).	3	2	2	9	3
GP2_6 GP2_7 GP2_8	The next statements refer to the environment in the neonatal ward.					
	GP2_8 The environment in your neonatal ward allows mothers to have privacy.	10	23	15	33	18

84%

GP2_5b answered by 547 but divided by the total of 916 answers for GP2_5a
GP2_5c answered by 170 but divided by the total of 916 answers for GP2_5a

Guiding Principle 2

International median score 82

	Indicators	Answers (%)				
GP2_5	GP2_5 Mothers are able to eat close to your neonatal ward (no matter who provides the food).	Never	Rarely	Half the time	Frequently	Always
	GP2_5a Able to eat in the ward. (Optimal)	44	5	2	9	40
	GP2_5b Able to eat very close to the ward (5 minutes walking distance or less).	5	2	1	11	41
	GP2_5c Able to eat close to the ward (6 to 10 minutes walking distance).	3	2	2	9	3
GP2_6 GP2_7 GP2_8	The next statements refer to the environment in the neonatal ward.					
	GP2_8 The environment in your neonatal ward allows mothers to have privacy.	Never	Rarely	Half the time	Frequently	Always
		10	23	15	33	18

84%

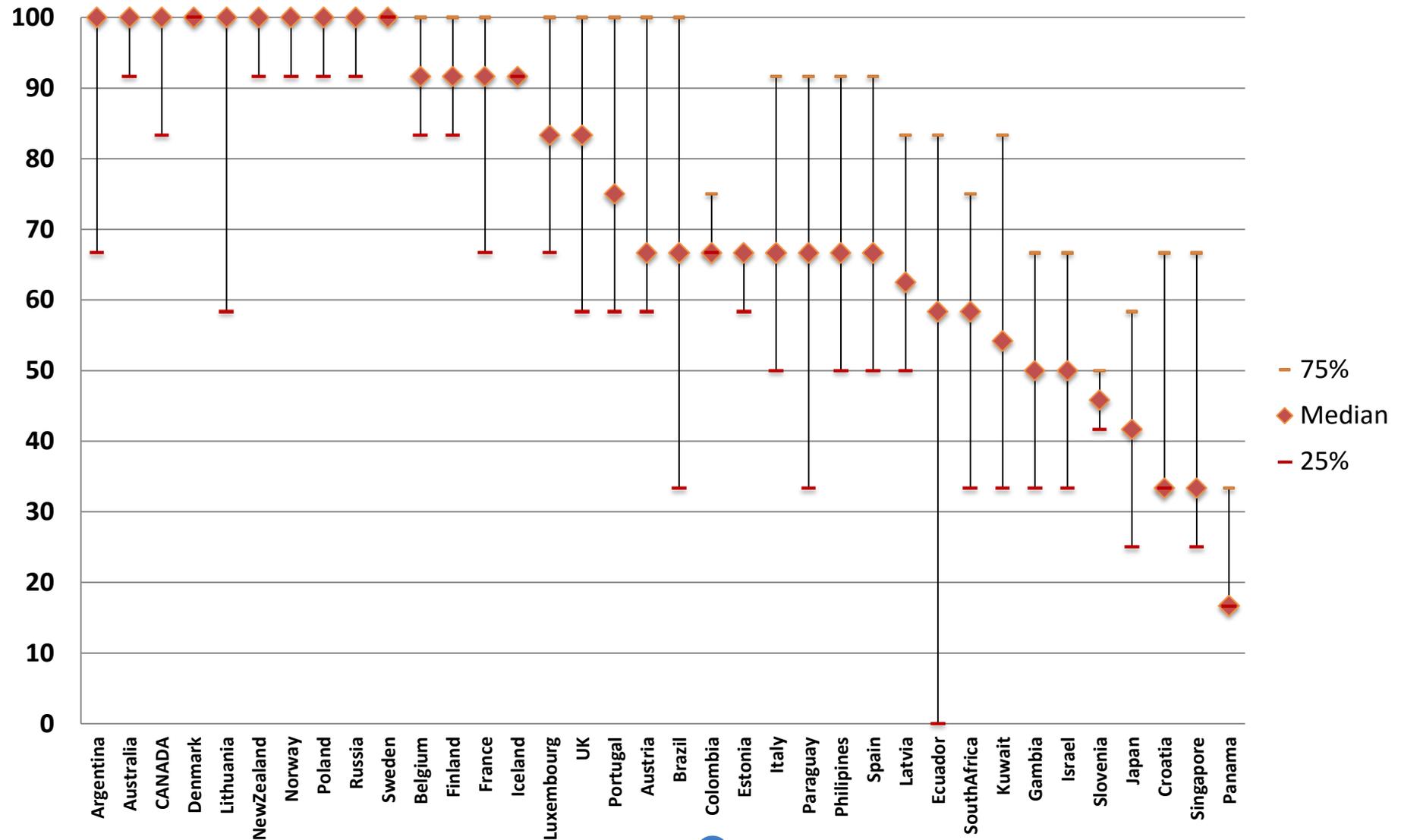
GP2_5b answered by 547 but divided by the total of 916 answers for GP2_5a
GP2_5c answered by 170 but divided by the total of 916 answers for GP2_5a

Step 7 (Neonatal expansion)

Practice rooming-in – allow mothers and infants to remain together – 24 hours a day.

- Partial International median score 67 (IQR 58-100, range 17 - 100)
variation based on countries' median scores.

Country Step 7 scores (median, IQR)



Significant differences in Step 7 scores for BFHI status

- Units in a hospital ever designated BFHI:
mean 78 (SD 26)
versus never designated BFHI:
mean 72 (SD 27) (p=0.0032)
- Significant differences between units in
different income groups (p<0.0001)

Step 7 – Rooming-in

	Country income group				Total
	Low-income n = 2	Lower middle-income n = 108	Upper middle-income n = 236	High-income n = 571	
Mean score 0-50 n = 195	50,0%	31,5%	25,8%	17,3%	21,3%
Mean score 58-75 n = 246	50,0%	25,0%	26,3%	27,3%	26,8%
Mean score 83-92 n = 165	0,0%	27,8%	11,0%	19,1%	18,0%
Mean score 100 n = 311	0,0%	15,7%	36,9%	36,3%	33,9%
Total	100,0%	100,0%	100,0%	100,0%	100,0%

- Significant differences between wards in different income groups ($p < 0.0001$)

Step 7 – Rooming-in

	Country income group				Total
	Low-income n = 2	Lower middle-income n = 108	Upper middle-income n = 236	High-income n = 571	
Mean score 0-50 n = 195	50,0%	31,5%	25,8%	17,3%	21,3%
Mean score 58-75 n = 246	50,0%	25,0%	26,3%	27,3%	26,8%
Mean score 83-92 n = 165	0,0%	27,8%	11,0%	19,1%	18,0%
Mean score 100 n = 311	0,0%	15,7%	36,9%	36,3%	33,9%
Total	100,0%	100,0%	100,0%	100,0%	100,0%

- Significant differences between wards in different income groups ($p < 0.0001$)

Step 7 – Rooming-in

International median score 67

Indicators		Answers (%)	
S7_1	S7_1 The mothers' presence beside their infants is unrestricted, even during emergency situations and medical rounds.	No 34	Yes 66

Step 7 – Rooming-in

International median score 67

Indicators		Answers (%)	
S7_1	S7_1 The mothers' presence beside their infants is unrestricted, even during emergency situations and medical rounds.	No 34	Yes 66

Step 7 – Rooming-in

International median score 67

Indicators	Answers (%)					
The next statements refer to mothers' possibility of sleeping close to their infants admitted to your neonatal ward.						
S7_3 Mothers have the possibility of sleeping in a bed in the same room as the infant during:						
	None	Not many	About half	Many	All	
S7_3a Infant's whole hospital stay. (Optimal)	58	9	5	10	18	
	None	Not many	About half	Many	All	
S7_3b At least 50% of the infant's hospital stay.	50	9	7	9	6	750 answers divided with 917 in total
	None	Not many	About half	Many	All	
S7_3c At least 1 night just before the infant's discharge home.	39	6	3	10	18	697 answers divided with 917 in total
	None	Not many	About half	Many	All	
S7_4 Mothers have the possibility of sleeping in a bed in another room in your neonatal ward during:						
	None	Not many	About half	Many	All	
S7_4a Infant's whole hospital stay. (Optimal)	38	10	5	11	18	750 answer divided with 917 in total
	None	Not many	About half	Many	All	
S7_4b At least 50% of the infant's hospital stay.	36	11	5	9	4	585 answers divided with 917 in total
	None	Not many	About half	Many	All	
S7_4c At least 1 night just before the infant's discharge home.	32	6	3	9	10	550 answers divided with 917 in total
	None	Not many	About half	Many	All	
S7_5 Mothers have the possibility of sleeping in a bed in another area of the hospital or close to the hospital (10 minutes walking distance from infant or less) during:						
	None	Not many	About half	Many	All	
S7_5a Infant's whole hospital stay. (Optimal)	25	13	7	9	10	585 answers divided with 917 in total
	None	Not many	About half	Many	All	
S7_5b At least 50% of the infant's hospital stay.	24	13	6	9	2	493 answers divided with 917 in total
	None	Not many	About half	Many	All	
S7_5c At least 1 night just before the infant's discharge home.	22	9	4	9	7	466 answers divided with 917 in total
	None	Not many	About half	Many	All	

Step 7 – Rooming-in

International median score 67

Indicators	Answers (%)					
The next statements refer to mothers' possibility of sleeping close to their infants admitted to your neonatal ward.						
S7_3 Mothers have the possibility of sleeping in a bed in the same room as the infant during:						
S7_3a Infant's whole hospital stay. (Optimal)	None	Not many	About half	Many	All	
	58	9	5	10	18	
S7_3b At least 50% of the infant's hospital stay.	None	Not many	About half	Many	All	
	50	9	7	9	6	750 answers divided with 917 in total
S7_3c At least 1 night just before the infant's discharge home.	None	Not many	About half	Many	All	
	39	6	3	10	18	697 answers divided with 917 in total
S7_4 Mothers have the possibility of sleeping in a bed in another room in your neonatal ward during:						
S7_4a Infant's whole hospital stay. (Optimal)	None	Not many	About half	Many	All	
	38	10	5	11	18	750 answer divided with 917 in total
S7_4b At least 50% of the infant's hospital stay.	None	Not many	About half	Many	All	
	36	11	5	9	4	585 answers divided with 917 in total
S7_4c At least 1 night just before the infant's discharge home.	None	Not many	About half	Many	All	
	32	6	3	9	10	550 answers divided with 917 in total
S7_5 Mothers have the possibility of sleeping in a bed in another area of the hospital or close to the hospital (10 minutes walking distance from infant or less) during:						
S7_5a Infant's whole hospital stay. (Optimal)	None	Not many	About half	Many	All	
	25	13	7	9	10	585 answers divided with 917 in total
S7_5b At least 50% of the infant's hospital stay.	None	Not many	About half	Many	All	
	24	13	6	9	2	493 answers divided with 917 in total
S7_5c At least 1 night just before the infant's discharge home.	None	Not many	About half	Many	All	
	22	9	4	9	7	466 answers divided with 917 in total

Step 7 – Rooming-in

International median score 67

Indicators	Answers (%)				
The next statements refer to mothers' possibility of sleeping close to their infants admitted to your neonatal ward.					
S7_3 Mothers have the possibility of sleeping in a bed in the same room as the infant during:					
	None	Not many	About half	Many	All
S7_3a Infant's whole hospital stay. (Optimal)	58	9	5	10	18
S7_3b At least 50% of the infant's hospital stay.	50	9	7	9	6
S7_3c At least 1 night just before the infant's discharge home.	39	6	3	10	18
750 answers divided with 917 in total					
S7_4 Mothers have the possibility of sleeping in a bed in another room in your neonatal ward during:					
	None	Not many	About half	Many	All
S7_4a Infant's whole hospital stay. (Optimal)	38	10	5	11	18
S7_4b At least 50% of the infant's hospital stay.	36	11	5	9	4
S7_4c At least 1 night just before the infant's discharge home.	32	6	3	9	10
550 answers divided with 917 in total					
S7_5 Mothers have the possibility of sleeping in a bed in another area of the hospital or close to the hospital (10 minutes walking distance from infant or less) during:					
	None	Not many	About half	Many	All
S7_5a Infant's whole hospital stay. (Optimal)	25	13	7	9	10
S7_5b At least 50% of the infant's hospital stay.	24	13	6	9	2
S7_5c At least 1 night just before the infant's discharge home.	22	9	4	9	7
466 answers divided with 917 in total					

Conclusion

- Country scores higher than 50 for all 36 participating countries demonstrate that neonatal units around the world are working to support breastfeeding.
- The study indicates international readiness to expand Baby-friendly standards to neonatal units. Hospital and governments should increase their efforts to promote, protect and support breastfeeding in preterm and ill infants.
- Neonatal units may differ considerably in Neo-BFHI compliance, both within and across countries.
- Skin-to-skin contact is known and used in most units, but in only 2% of units the duration is, in general, more than 20 hours/day.
- It seems that family-centered care is better implemented than rooming-in.

Thank you for your attention

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[Compliance with the Baby-friendly Hospital Initiative for Neonatal Wards \(Neo-BFHI\): A cross-sectional study in 36 countries.](#)

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The slides should not be published on the internet or circulated as they content unpublished results.

Guiding Principle 2

International median score 82

Extra slide

	Indicators	Answers (%)				
GP2_4	GP2_4 Mothers are able to rest by their infants' bedside in the neonatal ward:					
	GP2_4a On a bed/mattress. (Optimal)	Never 54	Rarely 9	Half the time 4	Frequently 10	Always 23
	GP2_4b On a chair with armrests or on a reclining chair.	Never 12	Rarely 6	Half the time 6	Frequently 19	Always 35
	GP2_4c On a chair without armrest.	Never 14	Rarely 7	Half the time 3	Frequently 9	Always 10

- 68% had always bed/mattress, recliner or chair.
- 5% had never bed/mattress, never recliner, and never chair (49 wards from 12 countries)

GP2_4b answered by 692 but divided by the total of 896 answers for GP2_4a

GP2_4c answered by 381 but divided by the total of 896 answers for GP2_4a