Supplementary Appendix A Survey questions

1) What is your specialty?
   a. Neonatologist
   b. Pediatrician (not neonatologist)
   c. Physician (non-pediatrician)
   d. Nurse
   e. Occupational therapist
   f. Speech-therapist
   g. Nursing Assistant
   h. Physiotherapist
   i. Other (specify)

2) In what type of unit do you work? (Check all that apply)
   a. NICU - University Hospital
   b. NICU - Private Hospital
   c. NICU / PICU – Private Hospital
   d. NICU - Public (Government) Hospital
   e. NICU / PICU - Public Hospital
   f. Level I nursery – assist deliveries

3) In what state is the unit you work located? (Open answer)

4) In what city is the unit you work located? (Open answer)

5) Does the unit you work provide therapeutic hypothermia for infants with moderate or severe hypoxic-ischemic encephalopathy (HIE)?
   a. Yes
   b. No, but I'd like to
   c. No, and there is no interest to implement this therapy

6) If the unit you work provides therapeutic hypothermia, on average, how many cases per year are treated? (Skip this question if previous answer was "b" or "c")
   a. 1 to 5
   b. 6 to 10
   c. > 10
   d. I do not know

7) If the unit you work provides therapeutic hypothermia, did it provide any type of specific training for clinical evaluation (Sarnat Score) of hypoxic ischemic encephalopathy (HIE)?
   a. No, we do not use specific scales or scores for the evaluation of HIE
   b. No, I had no specific training but I apply the Sarnat score to evaluate HIE
   c. No, I had no specific training but I apply another scale for assessment of HIE
   d. Yes, I did receive specific training but I do not have a certification in the exam
   e. Yes, I did specific training and I have international certification for the exam
8) Does the unit you work offers therapeutic hypothermia for infants with mild HIE?
   a. No
   b. Yes - based on evidence of acute perinatal insult and clinical neurological examination with abnormal aEEG
   c. Yes - based on evidence of acute perinatal insult and clinical neurological examination alone
   d. Yes - other, please specify:
   e. I do not know

9) Why the unit you work does not offer therapeutic hypothermia for infants with mild HIE (Check all that applies)?
   a. The vast majority of infants with mild HIE has no neurological injury
   b. There is no evidence to support cooling in infants with mild HIE
   c. Therapeutic hypothermia has side effects
   d. To avoid additional medical interventions such as ventilation/sedation and/or prolonged hospitalization
   e. Other, specify
   f. I do not know

10) Why the unit you work offers cooling for mild HIE? (Check all that applies)
   a. Infants with mild HIE can have adverse long-term neurological problems
   b. It is very difficult to classify the level of clinical encephalopathy within a few hours after birth
   c. An infant with mild HIE can progress to moderate HIE, and we can miss the therapeutic window of 6 hours for initiation of cooling
   d. Due to legal concerns if the infant presents neurological impairment later in life
   e. Therapeutic hypothermia is extremely safe and easy to provide
   f. Other, specify:
   g. I do not know

11) When therapeutic hypothermia is initiated in the unit you work? (Check all that applies)
   a. In the delivery room, soon after resuscitation
   b. As soon as the patient is admitted to the NICU
   c. Not in the delivery room or immediately after admission but always within the first 6 hours of life
   d. Not in the delivery room or immediately after admission but always within the first 24 hours of life
   e. Other, specify:

12) What is the method used for providing therapeutic hypothermia in the unit you work? (Check all that applies)
   a. Servo-controlled whole body cooling with the thermal mattress
   b. Servo-controlled head cooling
c. Passive hypothermia with ice packs
d. Passive hypothermia by simply turning off the heating
e. Others, specify:

13) In the unit you work, how is temperature measured during therapeutic hypothermia? (Check all that applies)
   a. Axillary temperature every hour or at predetermined intervals
   b. Rectal temperature every hour or at predetermined intervals
   c. Rectal temperature continuously
   d. Esophageal temperature continuously
   e. Other, specify:

14) The unit you work does not provide therapeutic hypothermia because (Check all that applies):
   a. Lack of adequate equipment - we do not have thermal mattress
   b. Lack of adequate equipment - we do not have continuous measurement of rectal or esophageal temperature
   c. Lack of training and necessary knowledge
   d. I do not believe it is an effective therapy for prevention of morbidity and mortality in infants with hypoxic-ischemic encephalopathy

15) Does the unit you work have a pediatric neurologist service for consultation of patient with HIE receiving hypothermia?
   a. No.
   b. Yes, when necessary a pediatric neurologist can come for evaluation.
   c. Yes, a pediatric neurologist visits regularly the service.

16) Does the unit you work have the possibility of providing continuous brain monitoring with EEG or amplitude integrated EEG (aEEG)?
   a. No, we do not have EEG and/or aEEG, even intermittently
   b. No, we can only perform conventional EEG but not continuously
   c. Yes, we can apply EEG and/or aEEG continuously
   d. Yes, we can apply EEG and/or aEEG continuously and also have access to the neurophysiology team and video EEG

17) Does the unit you work have the possibility of transferring a newborn with HIE to another referral center within the 6-hour window?
   a. No, we do not have a service to refer
   b. Yes, we have a referral service and can refer them within 6 hours
   c. Yes, but no need to transfer since we perform hypothermia in our center

18) Does the unit you work have the possibility to perform brain MRI for these infants?
   a. No, MRI is not available and we cannot refer the patient during hospitalization
   b. No, MRI is not available but we perform brain CT scans
c. No, MRI is not available but we refer the patient to another service to perform brain MRI during hospitalization

d. Yes, we perform brain MRI in all infants treated with therapeutic hypothermia

e. Other:

19) Does the unit you work have a follow up service for these infants?

a. No, we do not perform follow up of these patients or high risk newborns in general.

b. No, we do not perform follow up of patients but reference them to specialized care.

c. Yes, we have follow up for these patients but without a multidisciplinary team

d. Yes, we have follow up for these patients with a multidisciplinary team

Supplementary Figure S1  Proportion of population and survey respondents per country region

The Southeast region is the most populated (48%) of the country and the majority of respondents were from this region (65%). Although the Northeast region is the second populated (28%) only 10% of the respondents were from this area. The population distribution of the country was based on the last Brazilian census published in 2010. (https://ww2.ibge.gov.br/home/estatistica/populacao/condicaodevida/indicadoresminimos/tabela1.shtm)
### Supplementary Table S1  Surveys of therapeutic hypothermia (since 2007)

<table>
<thead>
<tr>
<th>Authors (ref)</th>
<th>Type of publication</th>
<th>Country</th>
<th>Year of the Study</th>
<th>Survey method</th>
<th>Target</th>
<th>Objectives</th>
<th>N replied</th>
<th>Providing TH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chandrasekaran et al&lt;sup&gt;15&lt;/sup&gt;</td>
<td>Research Letters</td>
<td>India</td>
<td>2015</td>
<td>E-mailed link of a Web based questionnaire</td>
<td>Clinical heads</td>
<td>TH use and current practices</td>
<td>93 (78%)</td>
<td>NICUS</td>
</tr>
<tr>
<td>Gerstl et al&lt;sup&gt;16&lt;/sup&gt;</td>
<td>Original article</td>
<td>Austria</td>
<td>2013</td>
<td>Mail survey questionnaire</td>
<td>Clinical heads of all neonatal level-II and III units in Austria</td>
<td>Current practice of TH and need for a national perinatal asphyxia + TH registry</td>
<td>30 (100%)</td>
<td>NICUs</td>
</tr>
<tr>
<td>Harris et al&lt;sup&gt;17&lt;/sup&gt;</td>
<td>Original article</td>
<td>USA</td>
<td>2011</td>
<td>Mail survey questionnaire</td>
<td>Directors of NICUs</td>
<td>TH use in NICUs and variability in clinical practices</td>
<td>338 (42%)</td>
<td>NICUS</td>
</tr>
<tr>
<td>Su&lt;sup&gt;18&lt;/sup&gt;</td>
<td>Letter to editor</td>
<td>Taiwan</td>
<td>2010-2011</td>
<td>E-mailed link of a Web based questionnaire</td>
<td>Directors of NICUs approved by the Society of Neonatology Taiwan</td>
<td>TH use and practices</td>
<td>15 (88%)</td>
<td>NICUs</td>
</tr>
<tr>
<td>Isata et al&lt;sup&gt;19&lt;/sup&gt;</td>
<td>Original article</td>
<td>Japan</td>
<td>2010</td>
<td>Nationwide Survey of clinical practice</td>
<td>Directors of NICUs registered in the Japan Society of Perinatal &amp; Neonatal Medicine</td>
<td>Current practice regarding TH + adherence to the TH protocols</td>
<td>202 (84%)</td>
<td>NICUs</td>
</tr>
<tr>
<td>Joolay et al&lt;sup&gt;20&lt;/sup&gt;</td>
<td>Original article</td>
<td>South Africa</td>
<td>-</td>
<td>Web-based survey</td>
<td>South African pediatricians and neonologists</td>
<td>To determine opinions and practices regarding TH and management of HIE</td>
<td>109 (38%)</td>
<td>participants</td>
</tr>
<tr>
<td>Akula et al&lt;sup&gt;21&lt;/sup&gt;</td>
<td>Original article</td>
<td>USA (California)</td>
<td>2010</td>
<td>E-mailed link of a Web based questionnaire</td>
<td>Directors of NICUs in California</td>
<td>Determine current practice of TH with specific attention to cooling in transport</td>
<td>110 NICUs</td>
<td>28 (25%) NICUs</td>
</tr>
<tr>
<td>Allen et al&lt;sup&gt;22&lt;/sup&gt;</td>
<td>Letter to editor</td>
<td>Ireland</td>
<td>2010</td>
<td>E-mailed link of Web based questionnaire</td>
<td>Clinical leads of NICUs in Ireland</td>
<td>Determine current practice of TH + opinion regarding development of a nationwide strategy</td>
<td>20 (100%)</td>
<td>6 (30%) NICUs</td>
</tr>
<tr>
<td>Kapetanakis et al&lt;sup&gt;23&lt;/sup&gt;</td>
<td>Original article</td>
<td>UK</td>
<td>2007</td>
<td>E-mailed link of a Web based questionnaire</td>
<td>Clinical leads of neonatal level I, II and III units in UK</td>
<td>Determine opinions and current practice concerning TH</td>
<td>125 (66%)</td>
<td>NICUs</td>
</tr>
<tr>
<td>Amaez et al&lt;sup&gt;24&lt;/sup&gt;</td>
<td>Original article</td>
<td>Spain</td>
<td>2012-2013 (for TH use - June 2015)</td>
<td>Mail survey questionnaire</td>
<td>Clinical heads</td>
<td>Obtain a comprehensive picture of neonatal care of the infant with HIE</td>
<td>90 (100%)</td>
<td>NICUs</td>
</tr>
</tbody>
</table>

**Abbreviations:** TH, therapeutic hypothermia; NICUs, neonatal intensive care units.

### Supplementary Table S2  Number of cases per year and survey responses

<table>
<thead>
<tr>
<th>Training on neurologic examination to define the level of encephalopathy</th>
<th>1–5 cases (n = 317)</th>
<th>6–10 cases (n = 129)</th>
<th>&gt;10 cases (n = 64)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30 (9)</td>
<td>21 (16)</td>
<td>19 (30)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hypothermia for infants with mild HIE</td>
<td>78 (25)</td>
<td>39 (30)</td>
<td>34 (53)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Servo-controlled whole-body hypothermia</td>
<td>68 (21)</td>
<td>27 (21)</td>
<td>29 (45)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Pediatric neurology: regular</td>
<td>68 (21)</td>
<td>39 (30)</td>
<td>30 (47)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>EEG or aEEG if needed</td>
<td>138 (44)</td>
<td>41 (32)</td>
<td>16 (25)</td>
<td>0.005</td>
</tr>
<tr>
<td>EEG or aEEG monitoring</td>
<td>38 (12)</td>
<td>28 (22)</td>
<td>16 (25)</td>
<td>0.005</td>
</tr>
<tr>
<td>Brain MRI always performed</td>
<td>78 (25)</td>
<td>32 (25)</td>
<td>25 (39)</td>
<td>0.051</td>
</tr>
</tbody>
</table>

**Abbreviations:** aEEG, amplitude-integrated electroencephalogram; EEG, electroencephalogram; HIE, hypoxic–ischemic encephalopathy; MRI, magnetic resonance imaging.

**Note:** Results are presented as n (%). Unknown number of cases per year = 114 responses. No differences between groups were noted for all other questions of the survey.