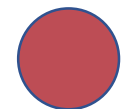




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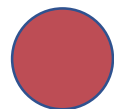
Marcelo Calderaro



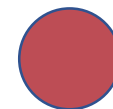
2014



2015



2017



2018



neurocritical Neurocrit Care
DOI 10.1007/s12028-014-9975-x

ORIGINAL ARTICLE

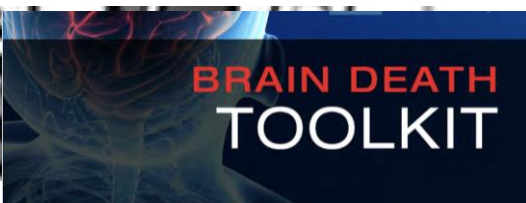
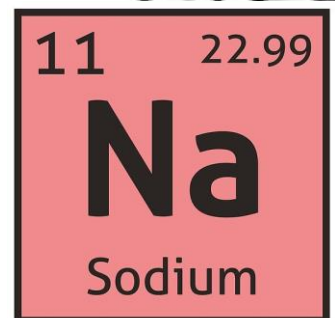
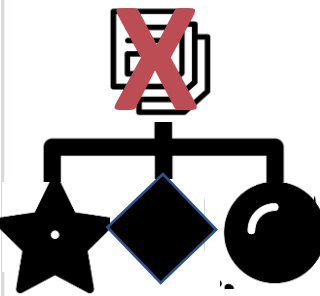
Simulation-Based Training in Brain Death Determination

Benjamin J. MacDougall · Jennifer D. Robinson ·
Liana Kappus · Stephanie N. Sudkoff ·
David M. Greer

DIÁRIO OFICIAL DA UNIÃO

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Órgão: Entidades de Fiscalização do Exercício das Profissões Liberais / Conselho Federal de Medicina

RESOLUÇÃO Nº 2.173, DE 23 DE NOVEMBRO DE 2017
Define os critérios do diagnóstico de morte encefálica.



Resultados

76%

Hiponatremia (Sódio menor que 135 mEq/L)
n=112 (34%) com Sódio maior que 155mEq/L
n=70 (22%) com Sódio maior que 160mEq/L

Hipernatremia (Sódio Maior que 145mEq/L)
n=247 (76%)
146 a 213 mEq/L
n=112 (34%) com Sódio maior que 155mEq/L
n=70 (22%) com Sódio maior que 160mEq/L

DE NEUROLOGIA

capacitação Acadêmica e Neurologia



Calderaro

Simulação Realística em Treinamento de Morte Encefálica

Simulation-Based Training in Brain Death Determination

Benjamin J. MacDougall · Jennifer D. Robinson ·
 Liana Kappus · Stephanie N. Sudkoff ·
 David M. Greer



Neurocrit Care 2014 Dec;21(3):383–91.

Simulation Training in Brain Death Determination

Sara Hocker, MD¹ Eelco F.M. Wijdicks, MD, PhD¹



Fig. 3 The image shows a learner evaluating the patient (mannequin) for brain death with the assistance of a registered nurse (RN) and respiratory therapist (RT). Top left and right: The learner is directing the performance of an apnea test with the assistance of the RN and RT. Cameras provide two views for the instructor: see the brainstem examination as well as a broader view of the learner as they move about the room. Bottom left: A camera is pointed toward the monitor. Each vital sign parameter can be changed remotely in response to decisions made by the trainee or to illicit certain responses by the trainee. Bottom right: Axial noncontrast computed tomography of the head. The facilitator can watch the learner scroll through the images as they describe what they see and discuss the implications of the image.

Semin Neurol. 2015 Apr 3;35(02):180–8.

Testing Confounders in Brain Death Determination: A New Simulation Model

Sara Hocker¹ · Donna Schumacher² · Jay Mandrekar³ · Eelco F.M. Wijdicks¹

Table 1 Legend: Evaluation checklist indicating performance on individual tasks including identification of prerequisites (light gray), neurologic examination (gray) and apnea testing (dark gray)

Competency tested	Total n (%)	Critical care n = 20	Neurology n = 21	p value
1. Establishes history and inquires about family	21 (51.2)	6 (30.0)	15 (71.4)	0.15
2. Considered whether there is any potential for benefit with treatment	24 (58.5)	8 (40.0)	16 (76.2)	0.15
3. Pre-oxygenates with FIO ₂ 100 %	31 (75.6)	15 (75.0)	16 (76.2)	1.00
4. Corrects the uncompensated respiratory alkalosis to adjust pCO ₂ to normocapnia (decreases set ventilator rate)	36 (87.8)	17 (85.0)	19 (90.5)	1.00
5. Decreases PEEP to 5 cm H ₂ O	19 (46.3)	9 (45.0)	10 (47.6)	1.00
6. Repeats ABG after adjusting above	30 (73.2)	15 (75.0)	15 (71.4)	1.00
7. Asks to see neuroimaging	38 (92.7)	18 (90.0)	20 (95.2)	1.00
8. Considers the possibility of alcohol/drug use	16 (39.0)	8 (40.0)	8 (38.1)	1.00
9. Excludes major acid/base, electrolyte or endocrine abnormalities	21 (51.2)	11 (55.0)	10 (47.6)	1.00
10. Inquires about sedating medications and neuromuscular blockade.	37 (90.2)	18 (90.0)	15 (71.4)	1.00
11. Requests admission and performance of exam out of the ED when the drugs have cleared	26 (63.4)	11 (55.0)	15 (71.4)	0.82
12. Recognizes hypothermia and corrects	36 (87.9)	18 (90.0)	18 (85.7)	1.00
13. Recognizes and corrects hypotension to systolic ≥100 mmHg	41 (100)	20 (100)	21 (100)	1.00
14. Checks to see if patient has spontaneous respirations and recognizes auto-cycling	9 (22.0)	6 (30.0)	3 (14.3)	0.82
15. Checks pupillary reflexes	41 (100)	20 (100)	21 (100)	1.00
16. Checks corneal reflexes	28 (68.3)	12 (60.0)	16 (76.2)	0.82
17. Checks oculocephalic reflex	37 (90.2)	17 (85.0)	20 (95.2)	0.82
18. Checks oculovestibular reflex and explains how an intact reflex would appear, HOB at 30 and ensures patency of canals	27 (65.9)	6 (30.0)	21 (100)	0.002
19. Checks noxious stimulus at supraorbital nerve or TMJ	31 (75.6)	11 (55.0)	20 (95.2)	0.03
20. Checks gag reflex	22 (53.7)	12 (60.0)	10 (47.6)	1.00
21. Checks cough reflex	36 (87.8)	17 (85.0)	19 (90.5)	1.00
22. Checks peripheral motor response	31 (75.6)	11 (55.0)	20 (95.2)	0.03
23. Correctly instructs RT to provide oxygen during apnea test	28 (68.3)	14 (70.0)	14 (66.7)	1.00
24. Uncovers chest and abdomen and observes for respiratory effort	13 (31.7)	8 (40.0)	5 (23.4)	0.82
25. Monitors vital signs during apnea test	37 (90.2)	20 (100)	17 (81.0)	0.46
If the patient does not desaturate, become hemodynamically unstable or have a witnessed attempted respiratory effort:				
26. Checks ABG after 8 min of apnea	10 (24.4)	5 (25.0)	5 (23.8)	1.00
27. Declares brain death at time of 2nd ABG	8 (19.5)	4 (20.0)	4 (19.0)	1.00
28. If apnea test is performed and breaths are delivered, recognizes it and aborts test	14/32 (43.8)	8/18 (44.4)	6/14 (42.9)	1.00

Neurocrit Care 2015 Dec;23(3):401–8.

Simulation techniques improve brain death diagnostic, communications skills of neurologists

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May 12, 2017

Safety and Quality Award

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Recipients: **David Do, MD**
 Philadelphia, PA
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Preston Douglas, MD
 Maywood, IL
Simulation-based training in brain death determination incorporating family discussion

Raghav Govindarajan, MD
 Columbia, MO
Telephonic Single Breath Count Test Administered by Nurses in Diagnosing Myasthenia Exacerbation

James E. Siegler III, MD
 Philadelphia, PA
Inter-Provider Communication Using a Scheduled Provider Alert-Response Communication System (SPARCS) in 3 Inpatient Neurology Units

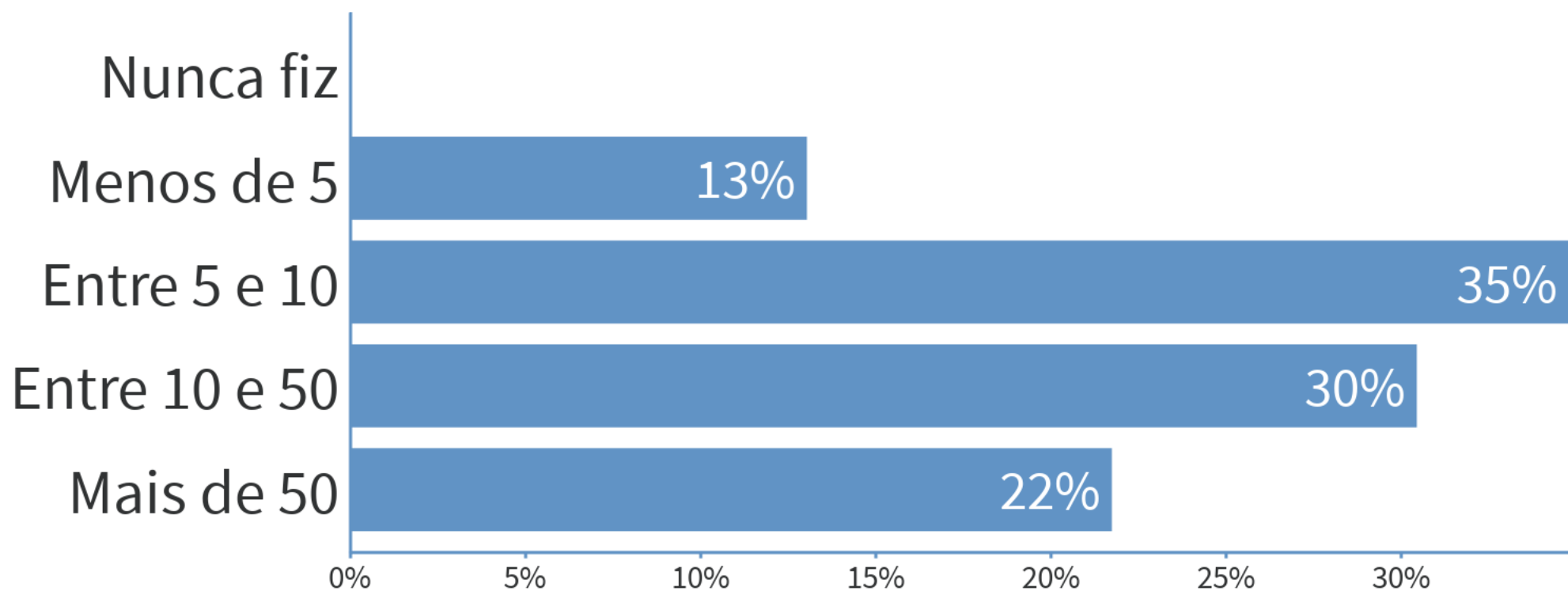
<https://www.news-medical.net/news/20170512/Simulation-techniques-improve-brain-death-diagnostic-communications-skills-of-neurologists.aspx>

Simulação Realística em Treinamento de Morte Encefálica

1. Possibilidade de oferecer chance de erro em ambiente seguro e oportunidade de feedback
2. Possibilidade de treinar situações menos corriqueiras / considerações sobre o volume
 - a. HC média de 90 avaliações por ano / cerca de 50 novos Residentes por ano (NCI, NC, Nped, UTI, emergências)

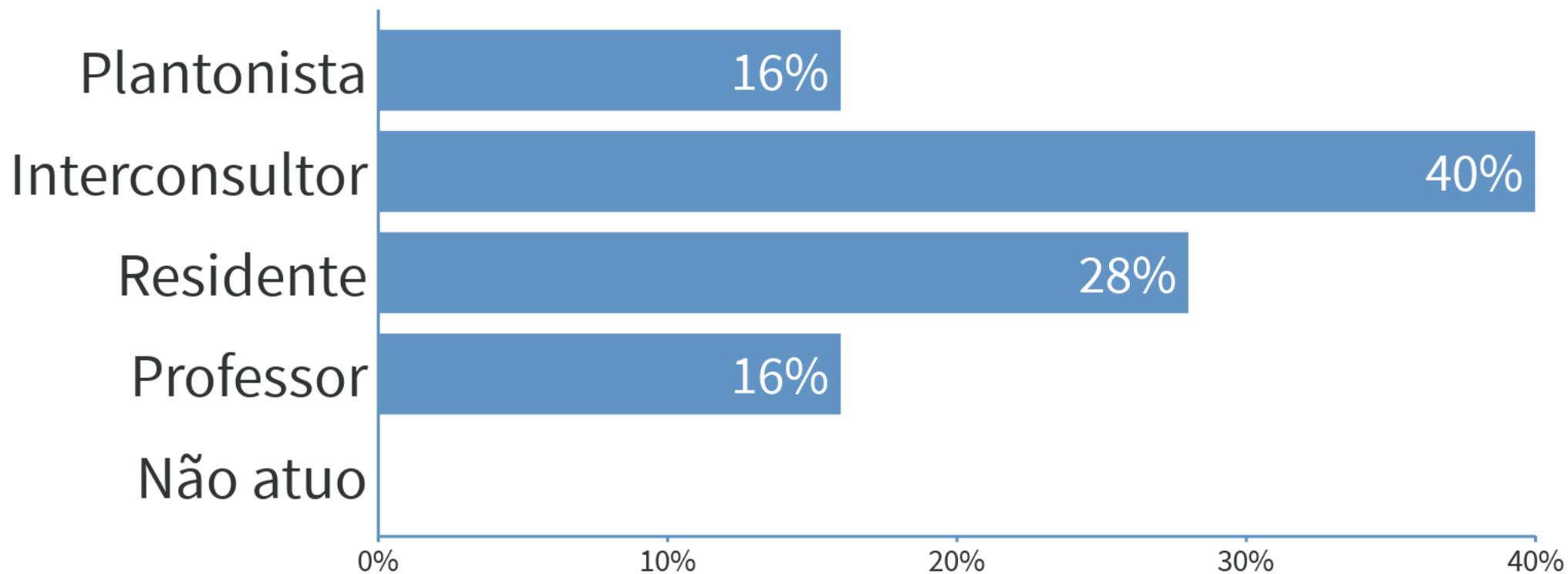
Qual o número estimado de avaliações de Morte Encefálica que você já fez?

Quando a pesquisa estiver ativa, responda em PollEv.com/avc2019



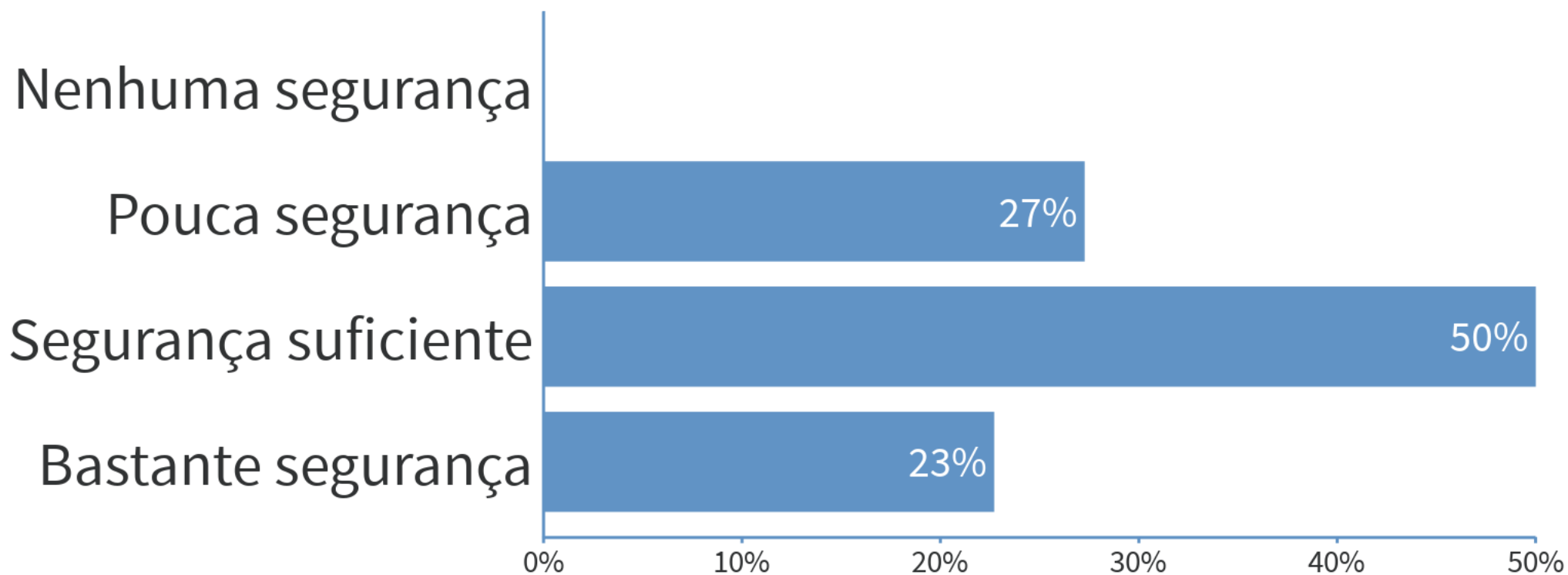
Qual sua atuação na avaliação de pacientes em UTI para suspeita de morte encefálica? (assinale a que mais se aplica)

Quando a pesquisa estiver ativa, responda em PollEv.com/avc2019



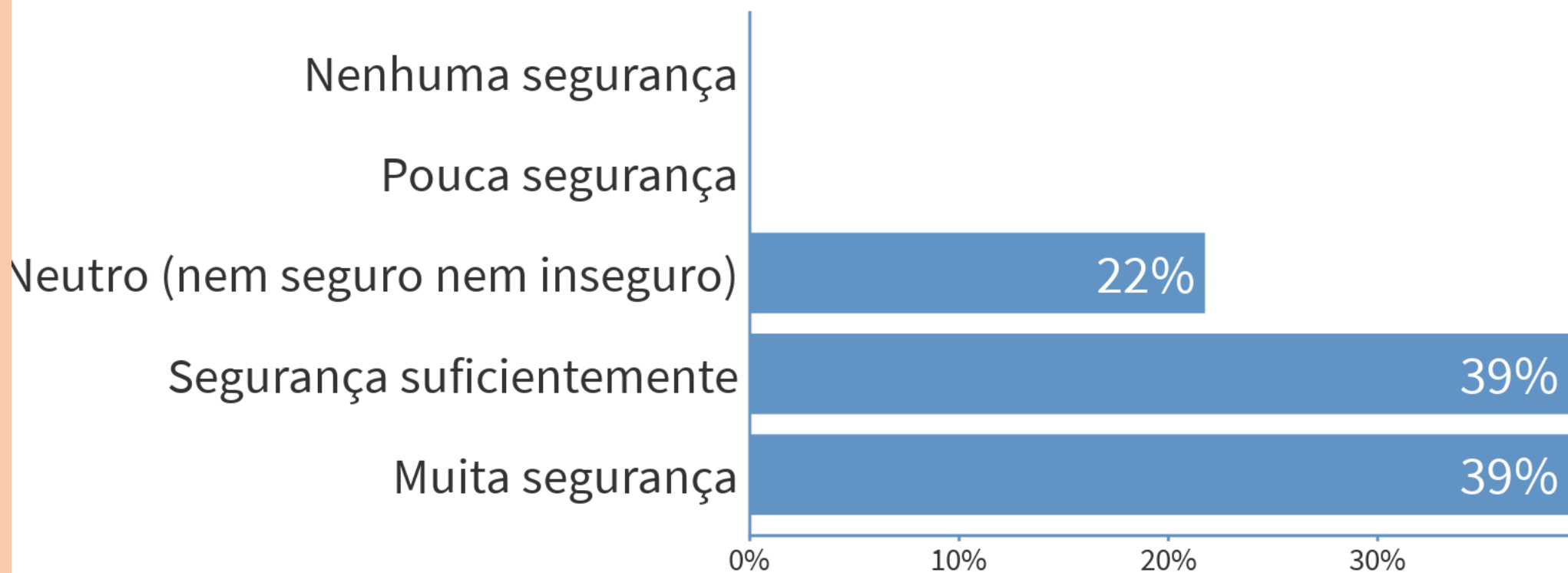
Como você julga sua segurança para realizar a avaliação clínica da suspeita de morte encefálica?

Quando a pesquisa estiver ativa, responda em PollEv.com/avc2019



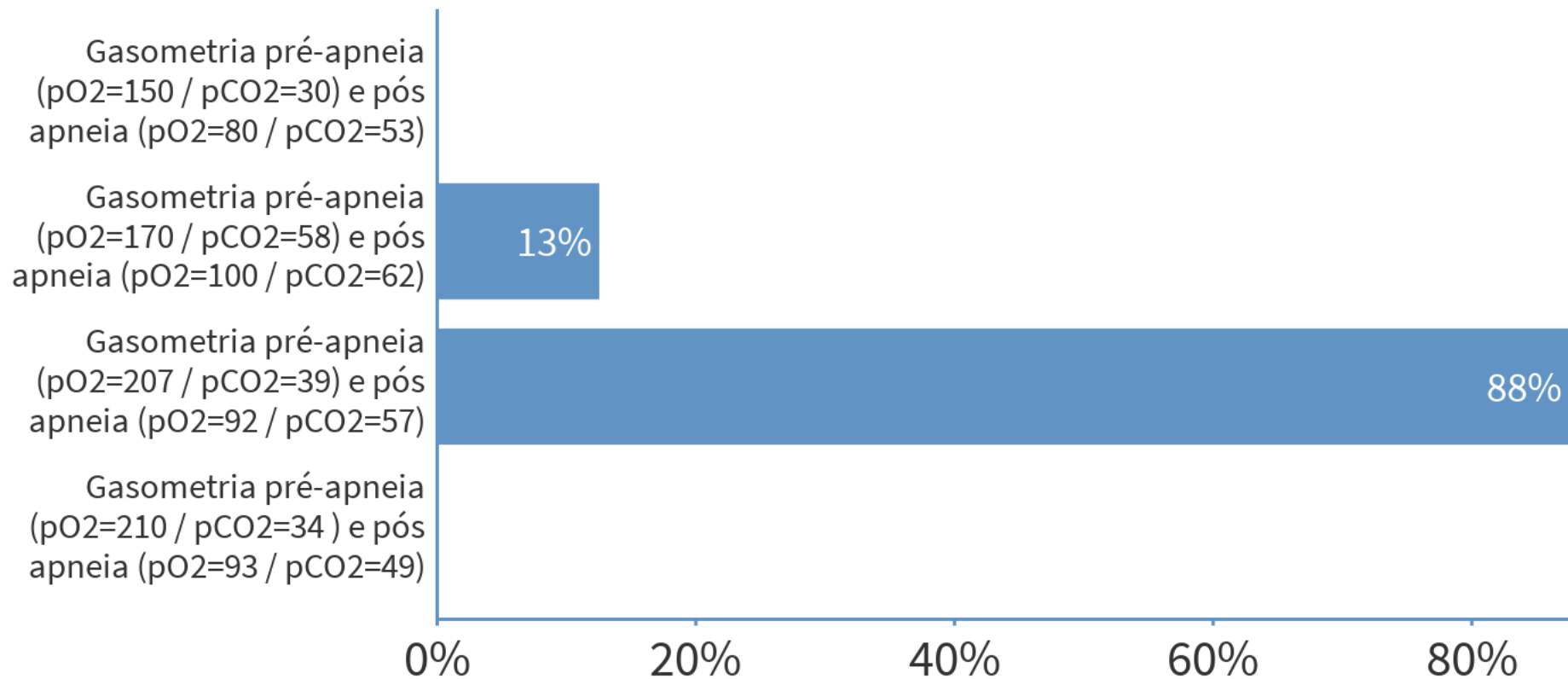
Como julga a sua segurança para explicar o que é morte encefálica para a família de um paciente?

Quando a pesquisa estiver ativa, responda em PollEv.com/avc2019



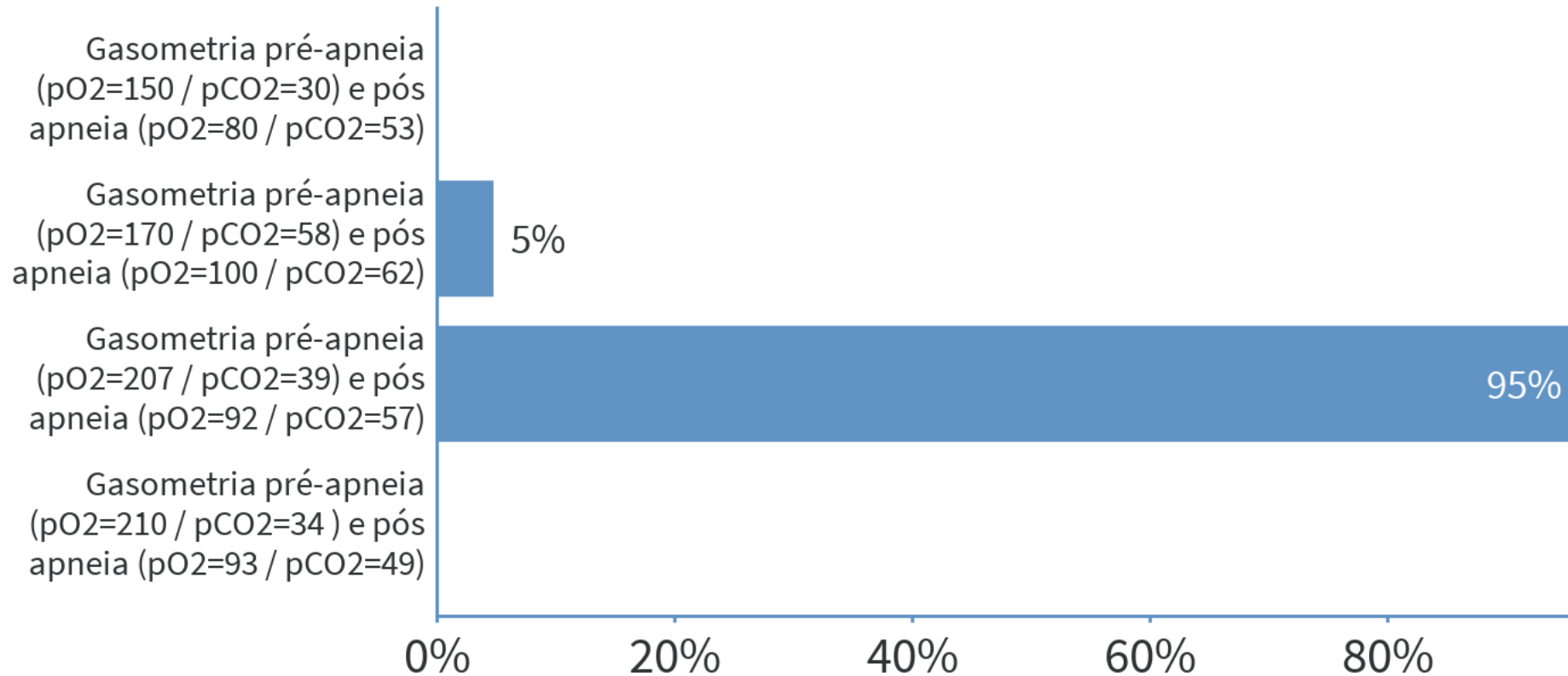
Considerando um paciente sem movimentos respiratórios na prova da apneia, e de acordo com a nova regulamentação do CFM (2173/2018) qual dos pacientes abaixo tem achados compatíveis com morte encefálica?

Quando a pesquisa estiver ativa, responda em PollEv.com/avc2019



Considerando um paciente sem movimentos respiratórios na prova da apneia, e de acordo com a nova regulamentação do CFM (2173/2018) qual dos pacientes abaixo tem achados compatíveis com morte encefálica?

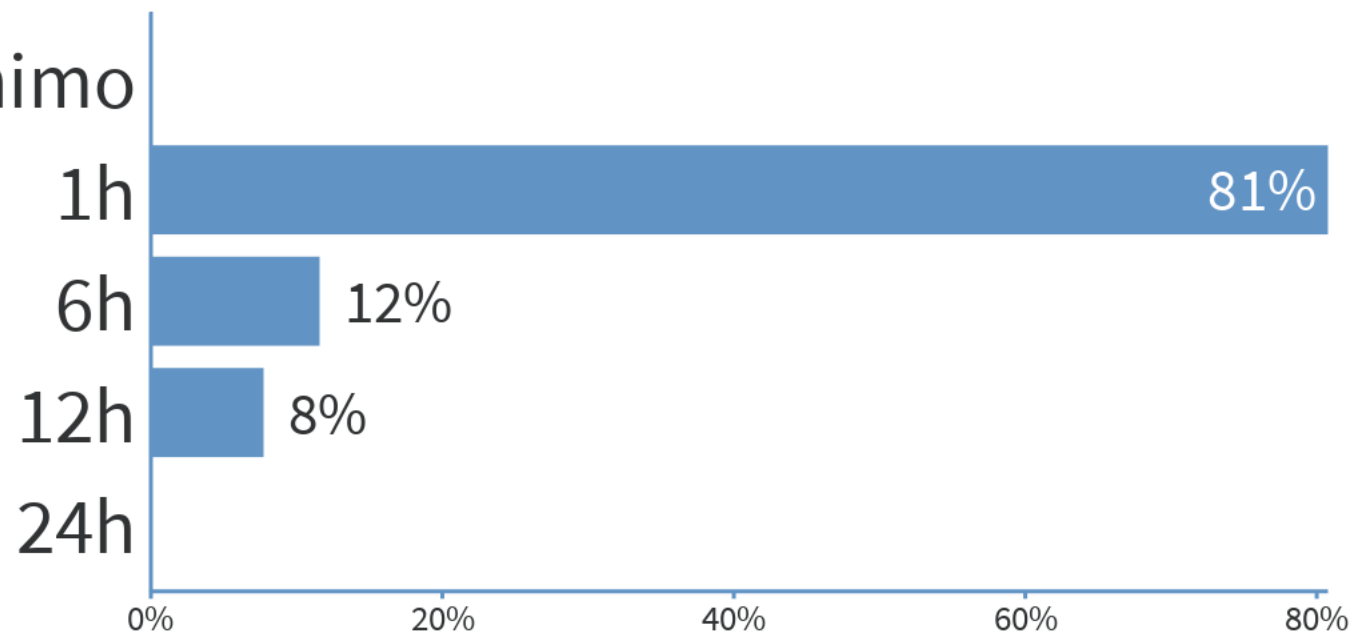
Quando a pesquisa estiver ativa, responda em PollEv.com/avc2019



De acordo com a resolução do CFM 2173/2018 qual o intervalo mínimo entre a primeira e segunda prova de morte encefálica?

Quando a pesquisa estiver ativa, responda em [PollEv.com/avc2019](https://poll.ev.com/avc2019)

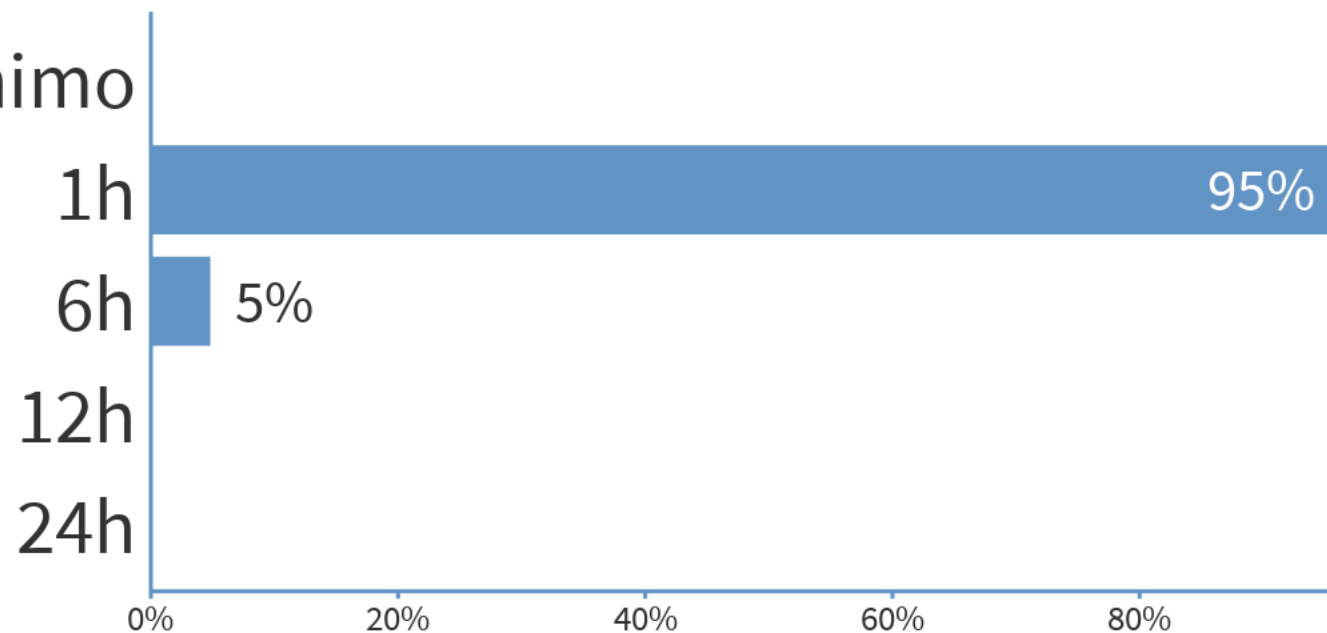
Não há intervalo mínimo



De acordo com a resolução do CFM 2173/2018 qual o intervalo mínimo entre a primeira e segunda prova de morte encefálica?

Quando a pesquisa estiver ativa, responda em PollEv.com/avc2019

Não há intervalo mínimo



Desafios 2019

- Envolver mais neurologistas
- Comissão para treinamento dentro da ABN
- Capilarizar o treinamento
- Desenvolver ferramenta que meça eficácia do treinamento
- Parceria AMIB – ABN
- Próximo Curso – 04/08/2019 – Reunião dos DCs da ABN em Campinas



Photo by Howard Riminton on Unsplash

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