

Etat des lieux de la sédation en Imagerie en coupe pédiatrique francophone

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... Pourquoi s'interroger ?

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Sedation, analgesia and anaesthesia in the radiology department second edition

1. Safe and effective sedation and analgesia is an essential part of radiological practice.
2. An appropriately trained and credentialed team should administer sedation and analgesia.
3. Patients requiring sedation should undergo pre-procedure assessment and have a sedation plan.
4. A World Health Organization (WHO) checklist should be used for every sedated patient.²
5. Sedated patients should be appropriately monitored.
6. Resuscitation equipment and reversal agents should be readily available.
7. A properly staffed recovery area and formalised communication are essential for safe after-care and discharge.
8. All sedation related complications should be recorded.
9. Regular audit of practice should be performed.
10. A multidisciplinary sedation committee should exist in each institution administering sedation and analgesia.

June 2018

[Hosp Pediatr](#). 2019 Jan;9(1):16-23. doi: 10.1542/hpeds.2018-0089. Epub 2018 Dec 12.

The Incidence and Nature of Allergic and Anaphylactic Reactions During Pediatric Procedural Sedation: A Report From the Pediatric Sedation Research Consortium.

[Hertzog JH](#)^{1,2}, [Preisberger K](#)³, [Penfil S](#)⁴.

Allergic reactions and anaphylaxis during pediatric procedural sedation are rare. The development of allergic reactions was significantly associated with the use of midazolam, ketamine, methohexital, and morphine.

[Pediatr Crit Care Med](#). 2017 Aug;18(8):e356-e363. doi: 10.1097/PCC.0000000000001246.

Pediatric Procedural Sedation Using the Combination of Ketamine and Propofol Outside of the Emergency Department: A Report From the Pediatric Sedation Research Consortium.

[Grunwell JR](#)¹, [Travers C](#), [Stormorken AG](#), [Scherrer PD](#), [Chumpitazi CE](#), [Stockwell JA](#), [Roback MG](#), [Cravero J](#), [Kamat PP](#).

The overall adverse event and serious adverse event rates were 9.79% (95% CI, 9.12-10.49%) and 3.47% (95% CI, 3.07-3.92%), respectively. No deaths occurred.

[Pediatrics](#). 2016 Mar;137(3):e20150463. doi: 10.1542/peds.2015-0463. Epub 2016 Feb 25.

Preterm Versus Term Children: Analysis of Sedation/Anesthesia Adverse Events and Longitudinal Risk.

[Havidich JE](#)¹, [Beach M](#)², [Dierdorf SF](#)³, [Onega T](#)², [Suresh G](#)², [Cravero JP](#)⁴.

Patients born preterm are nearly twice as likely to develop sedation / anesthesia adverse events, and this risk continues up to 23 years of age.

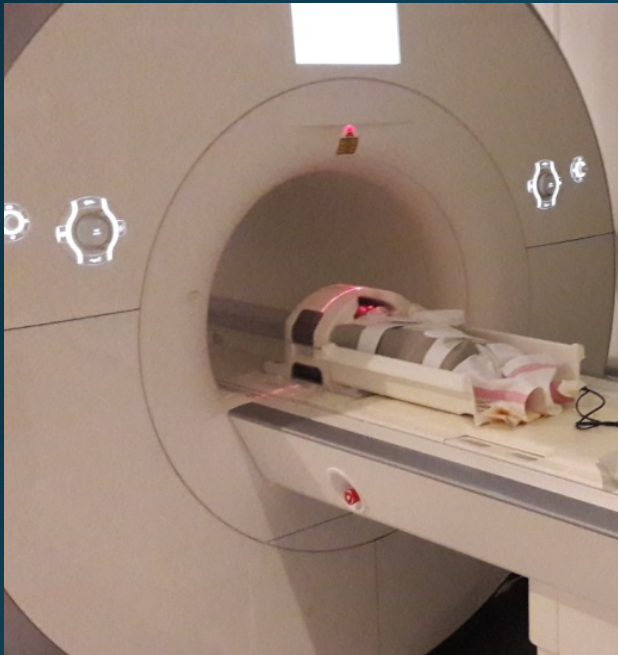
[Paediatr Anaesth](#). 2009 Jun;19(6):601-11. doi: 10.1111/j.1460-9592.2009.03023.x.

Propofol vs pentobarbital for sedation of children undergoing magnetic resonance imaging: results from the Pediatric Sedation Research Consortium.

[Mallory MD](#)¹, [Baxter AL](#), [Kost SI](#), [Pediatric Sedation Research Consortium](#).

Propofol provides more efficient and effective sedation than pentobarbital for children undergoing MRI. Although apnea occurred with a greater frequency in patients who received propofol, the rate of apnea and airway complications for propofol was not different

Introduction



scanner / IRM pédiatriques
nécessitent souvent une
sédation.

Pas de consensus en
France sur les modalités.

Quel est l'état des lieux des pratiques de sédation en
imagerie en coupes pédiatriques ?

Matériel et méthodes



Elaboration d'un questionnaire en collaboration avec les anesthésistes pédiatres.



Questionnaire en ligne centres de radiologies pédiatriques recensés par la SFIPP

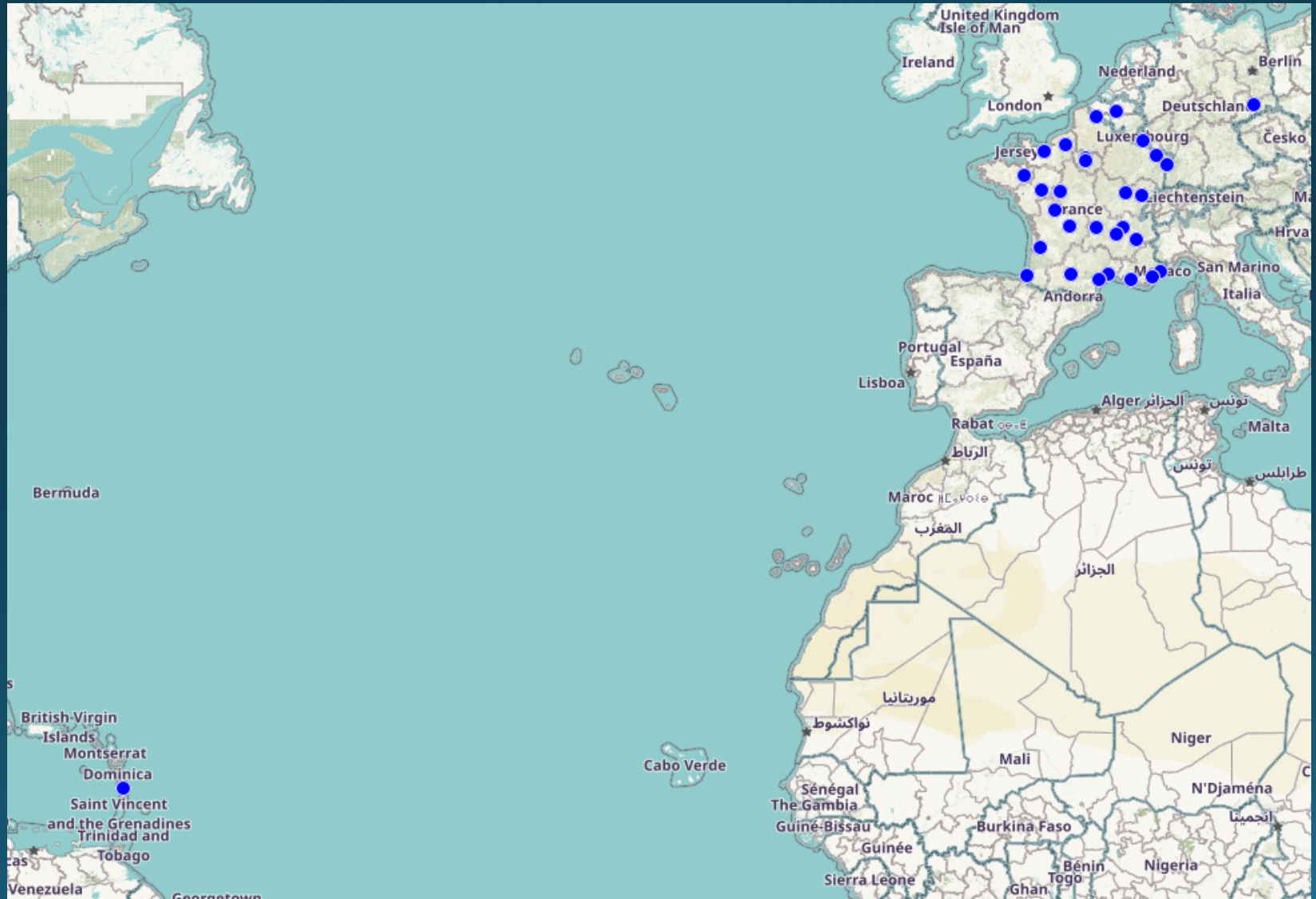


Entre janvier et juin 2019

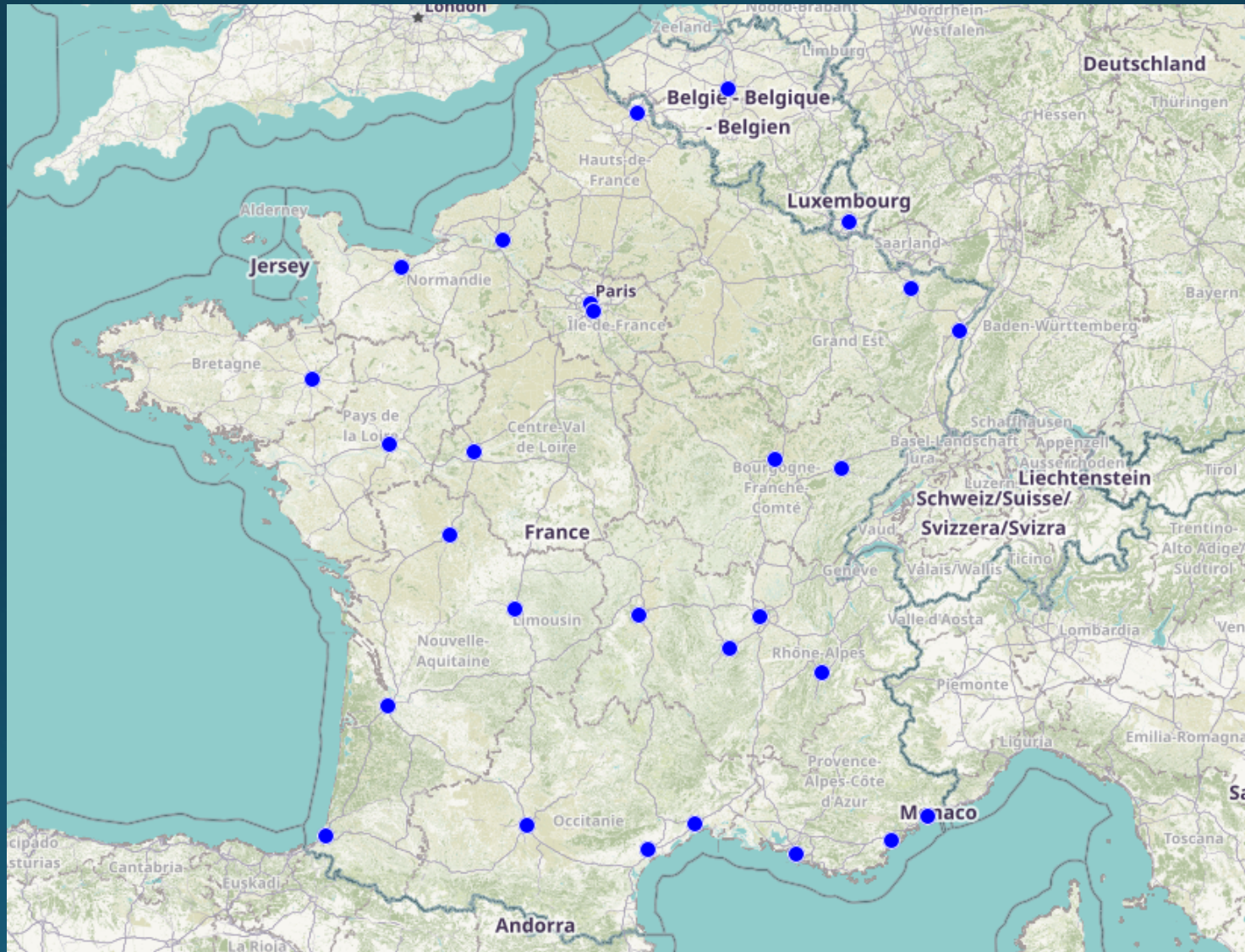


3 relances

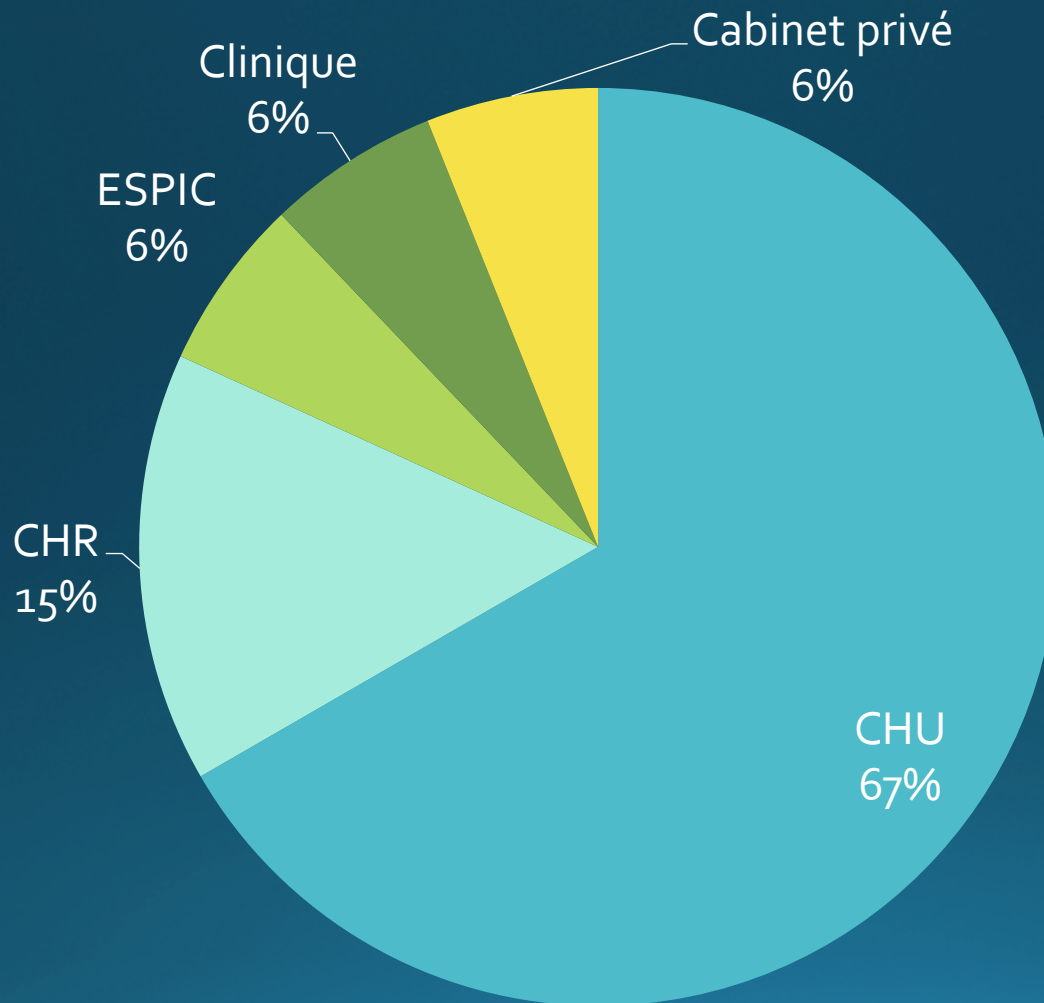
Carte des participants (et merci !)



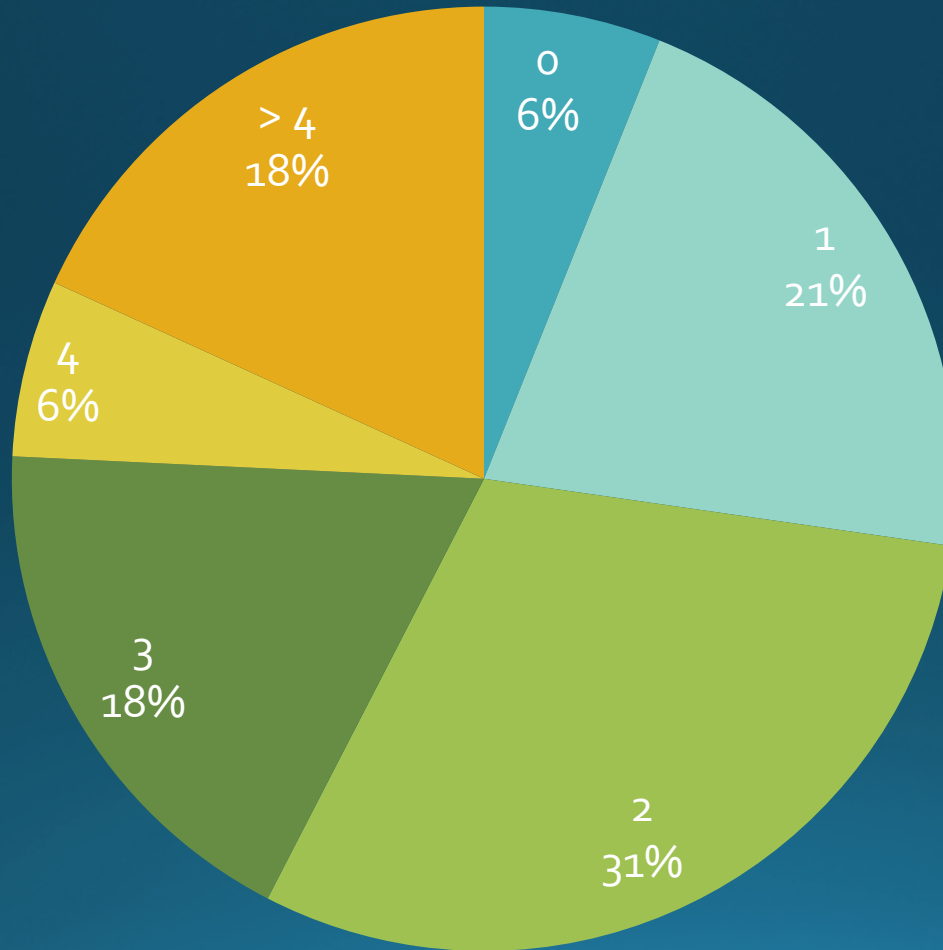
Carte des participants



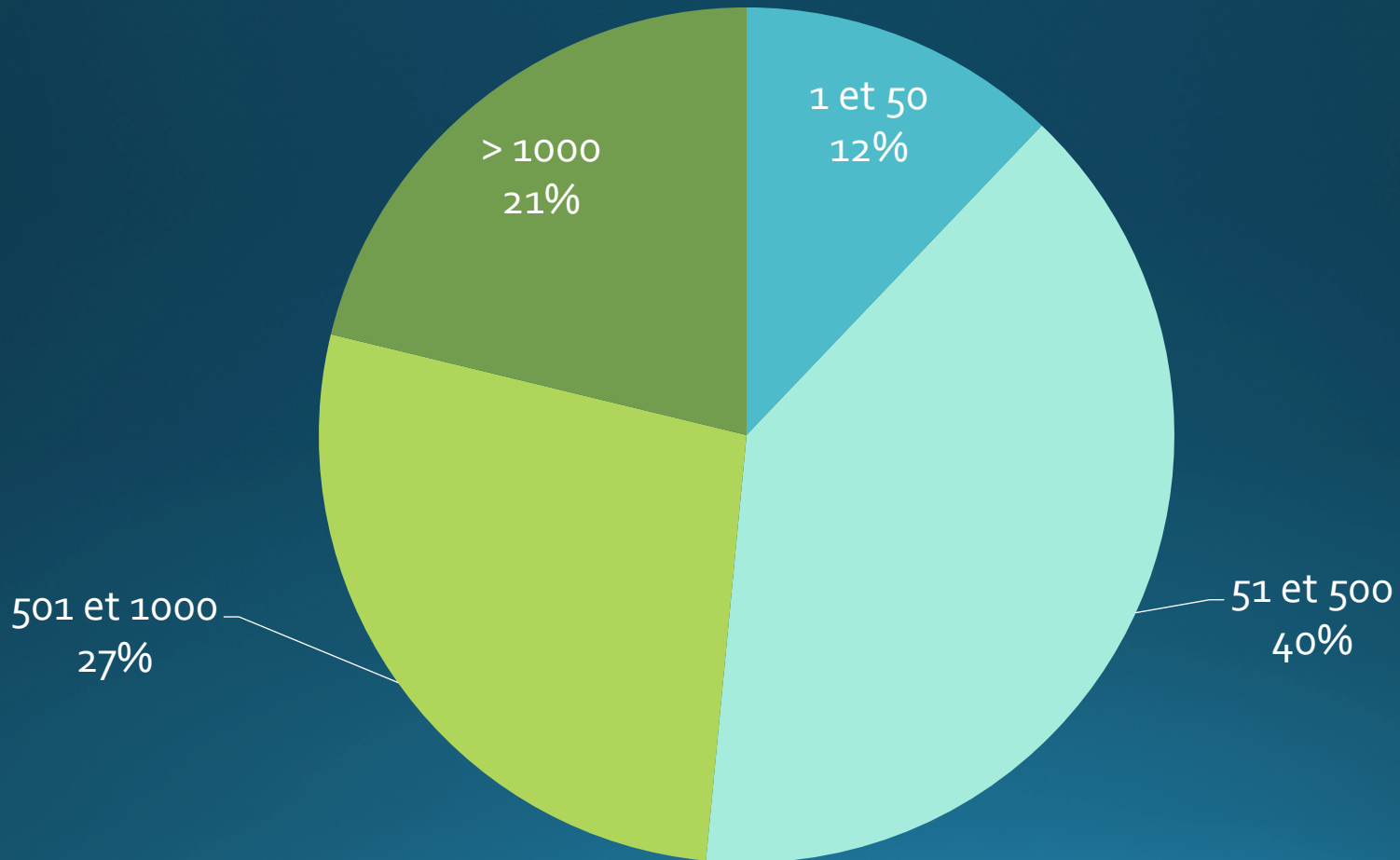
Résultats – Participation 33 centres



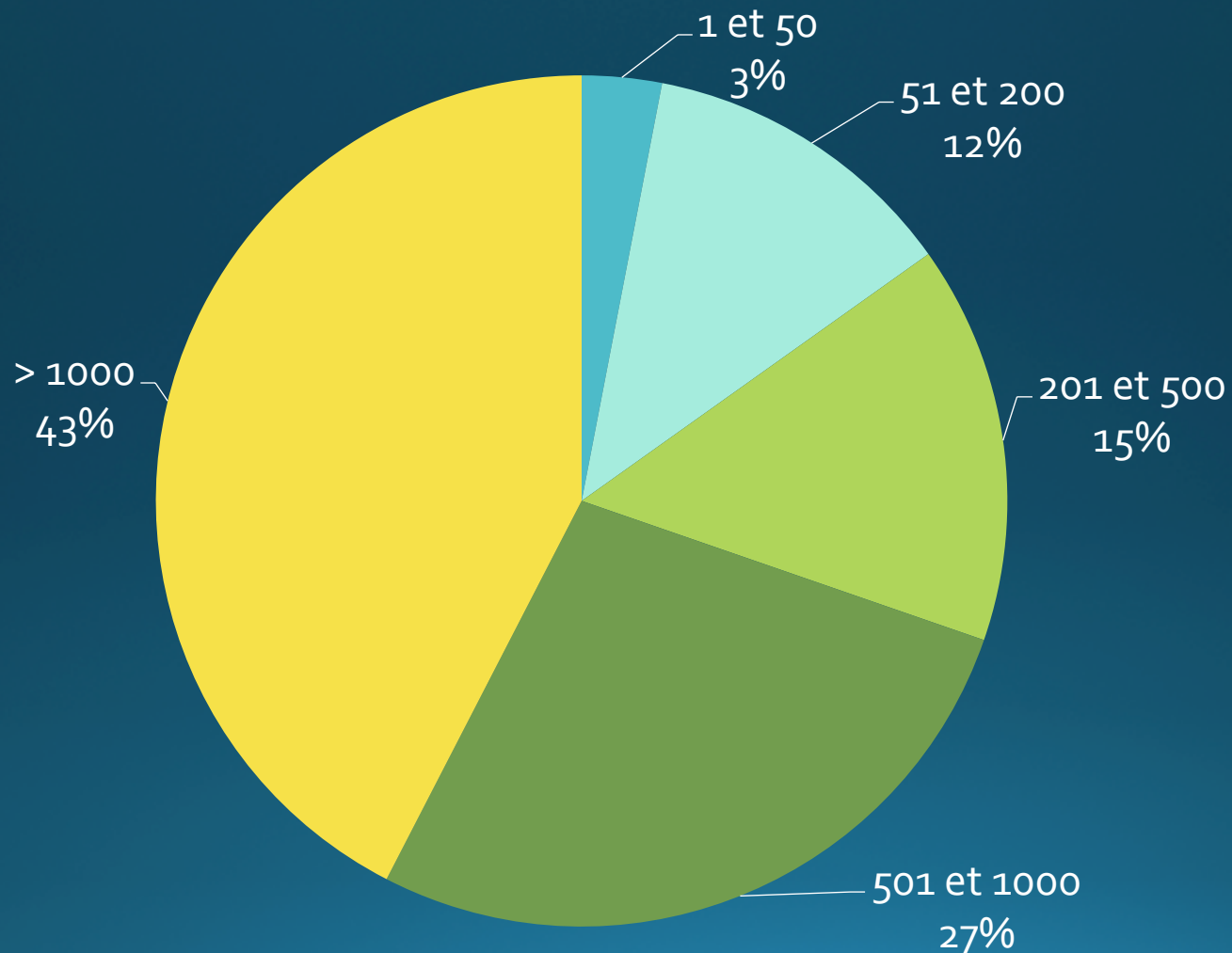
Radiopédiatre(s) par centre ?



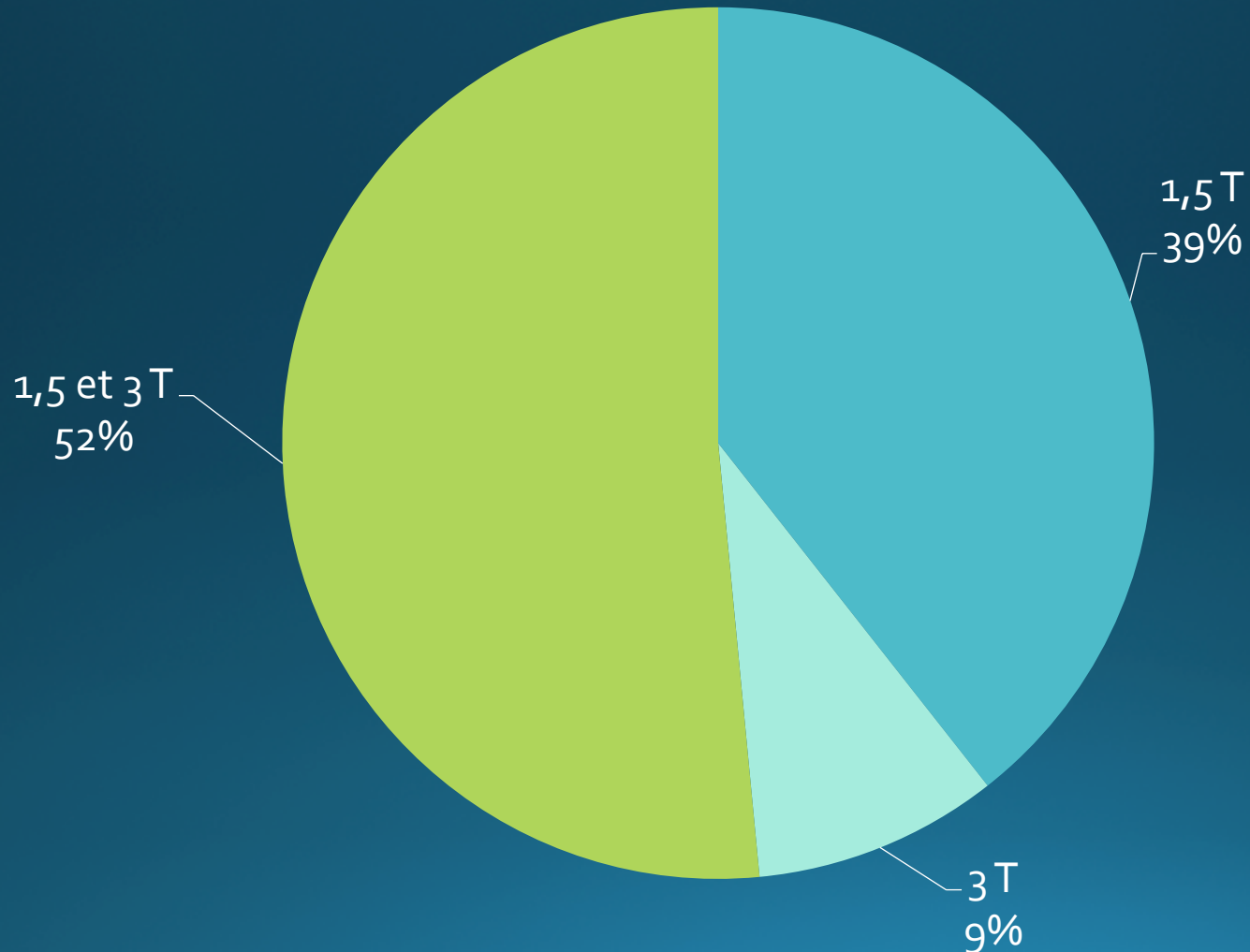
Nombre de TDM pédiatriques par an ?



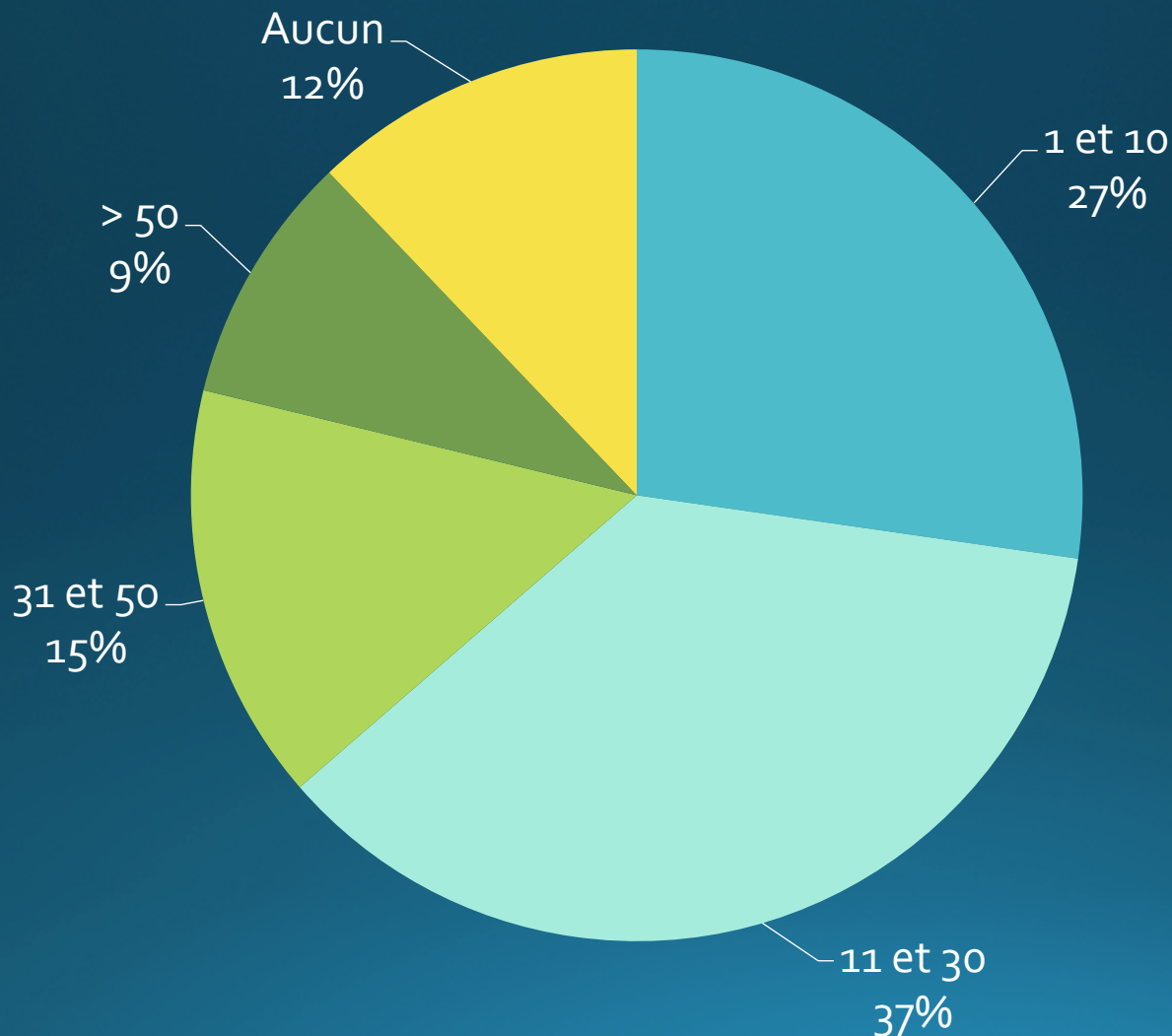
Nombre d'IRM pédiatriques par an ?



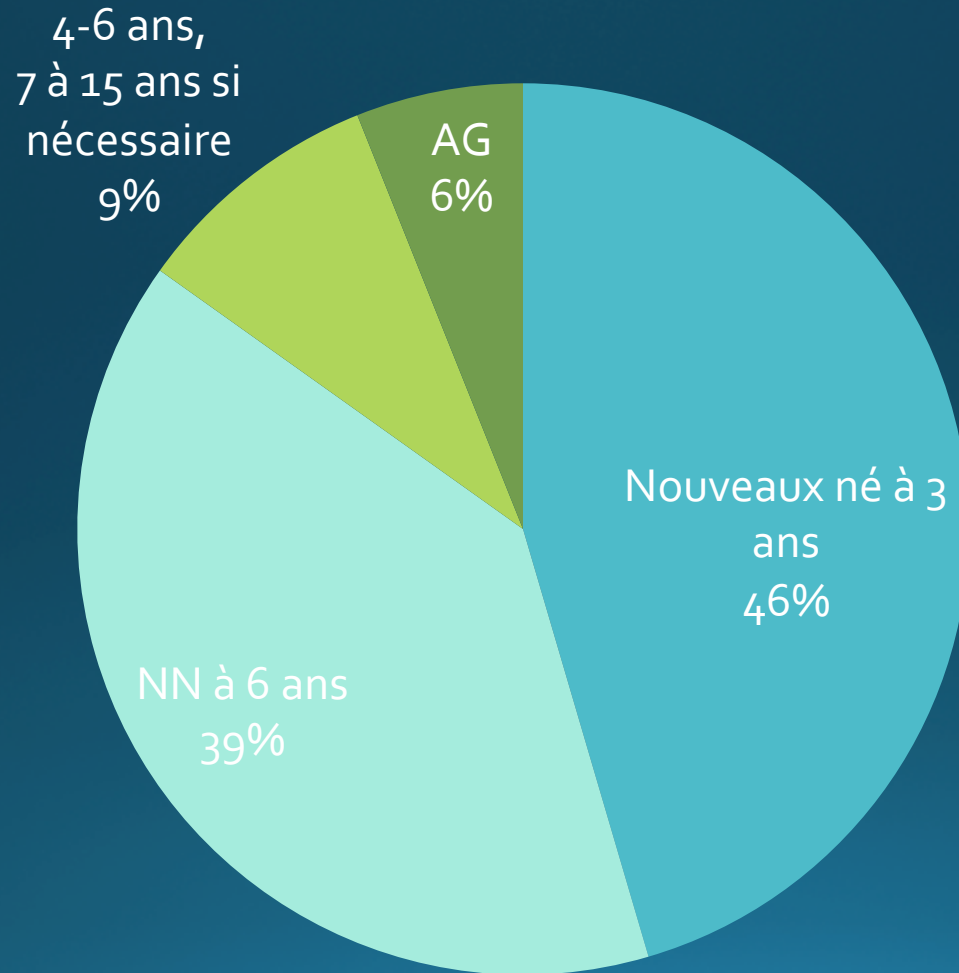
Quel type d'IRM ?



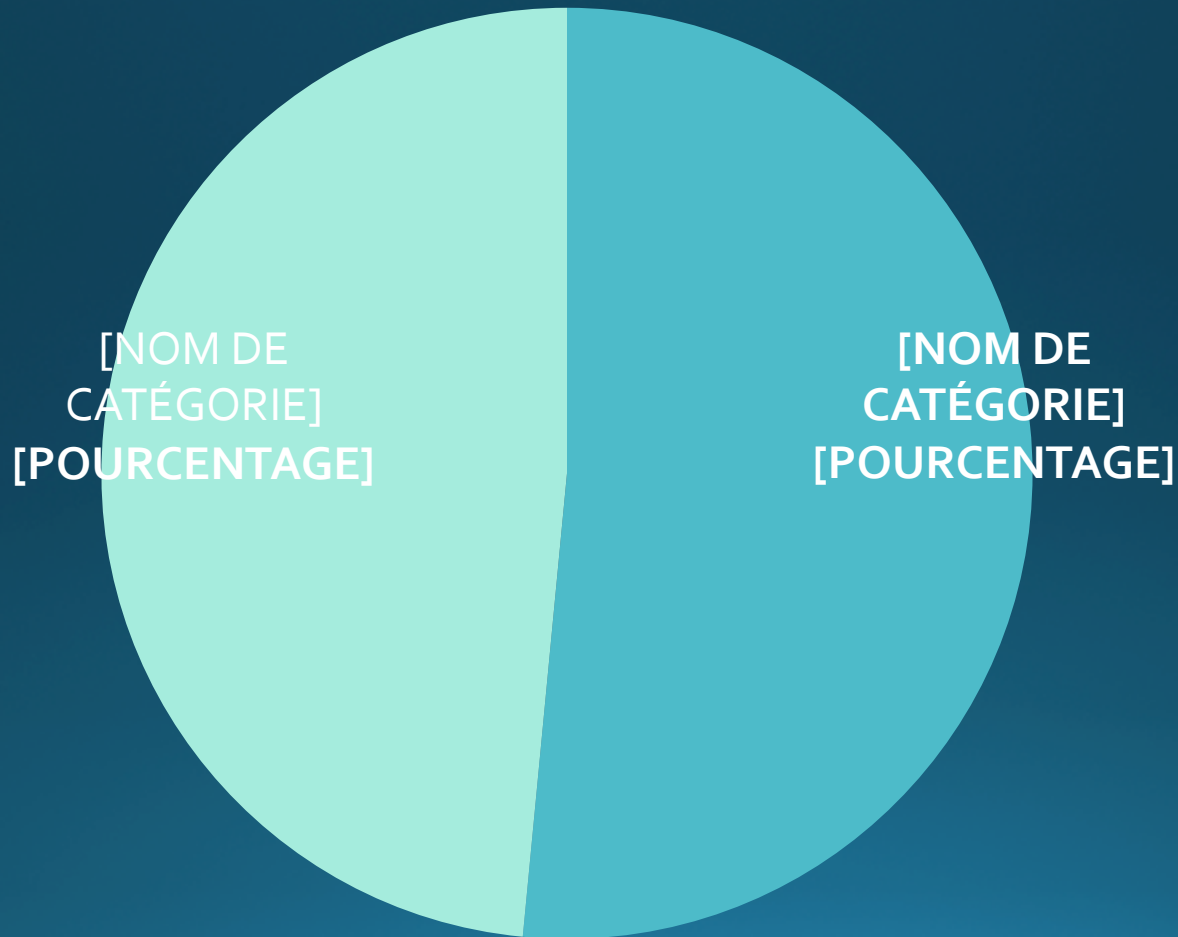
Combien de TDM ou IRM sous sédation par mois ?



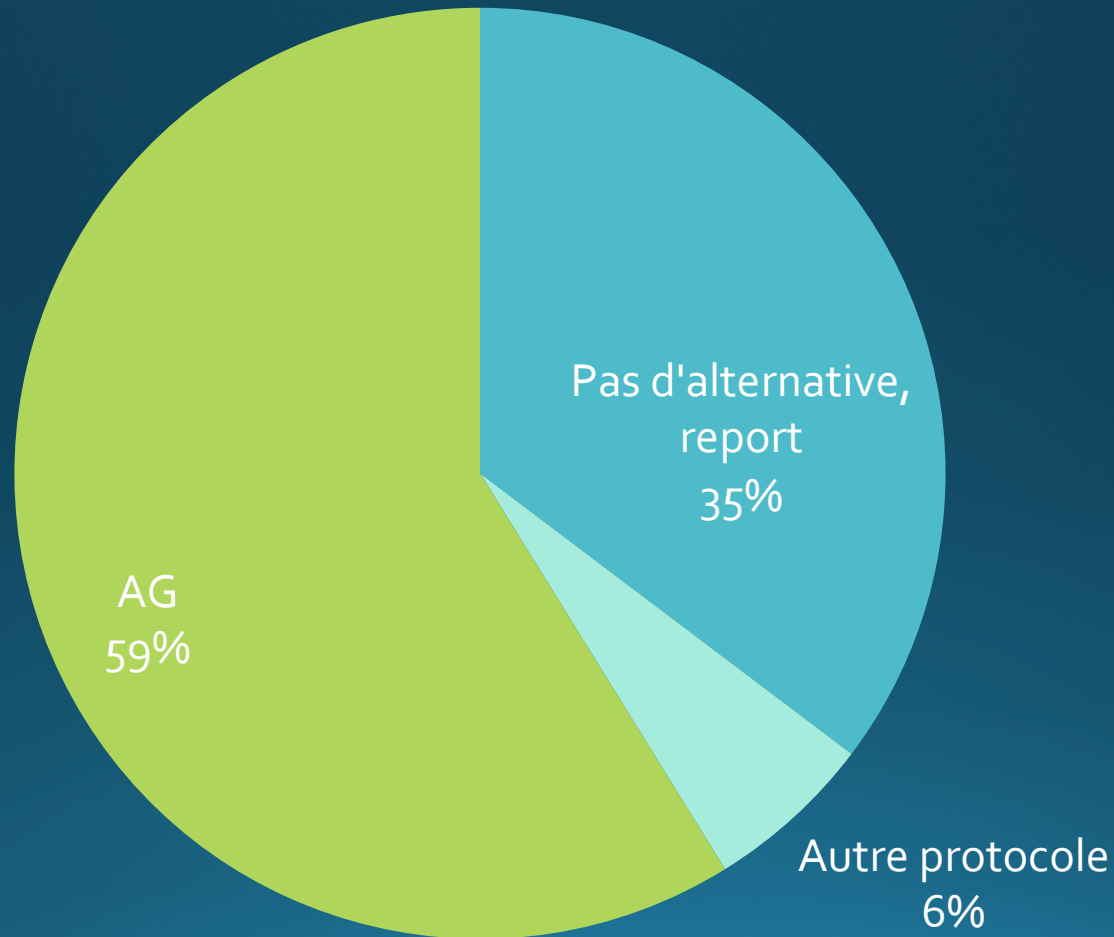
Quelle tranche d'âge pour la sédation ?



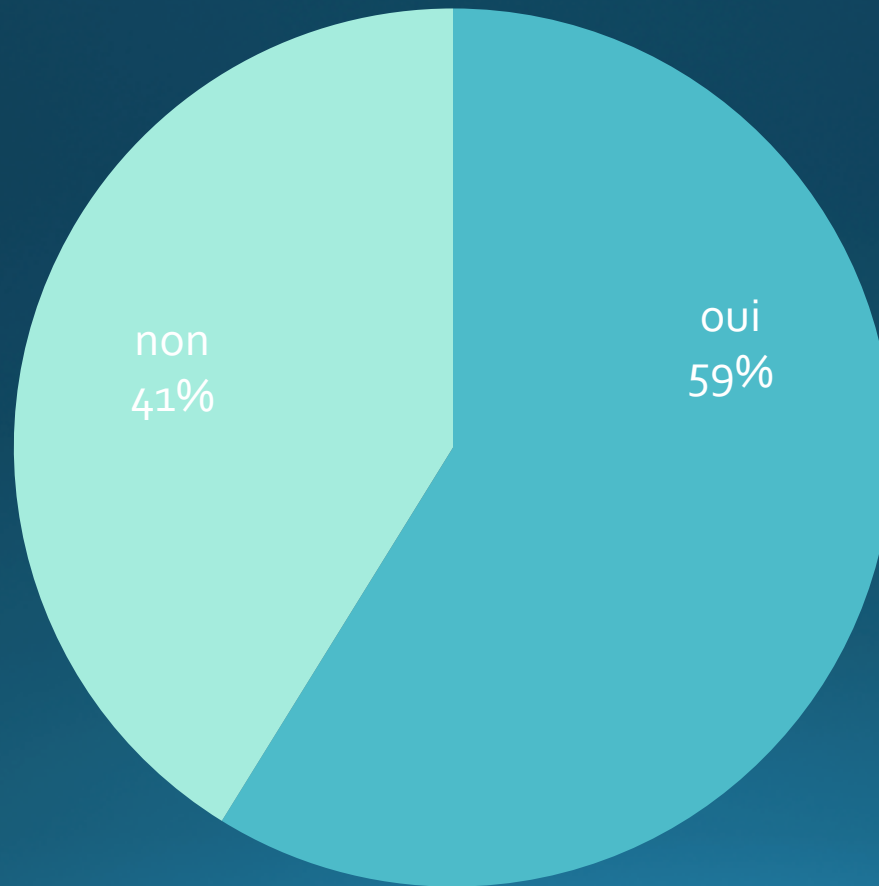
Présence d'un anesthésiste ?



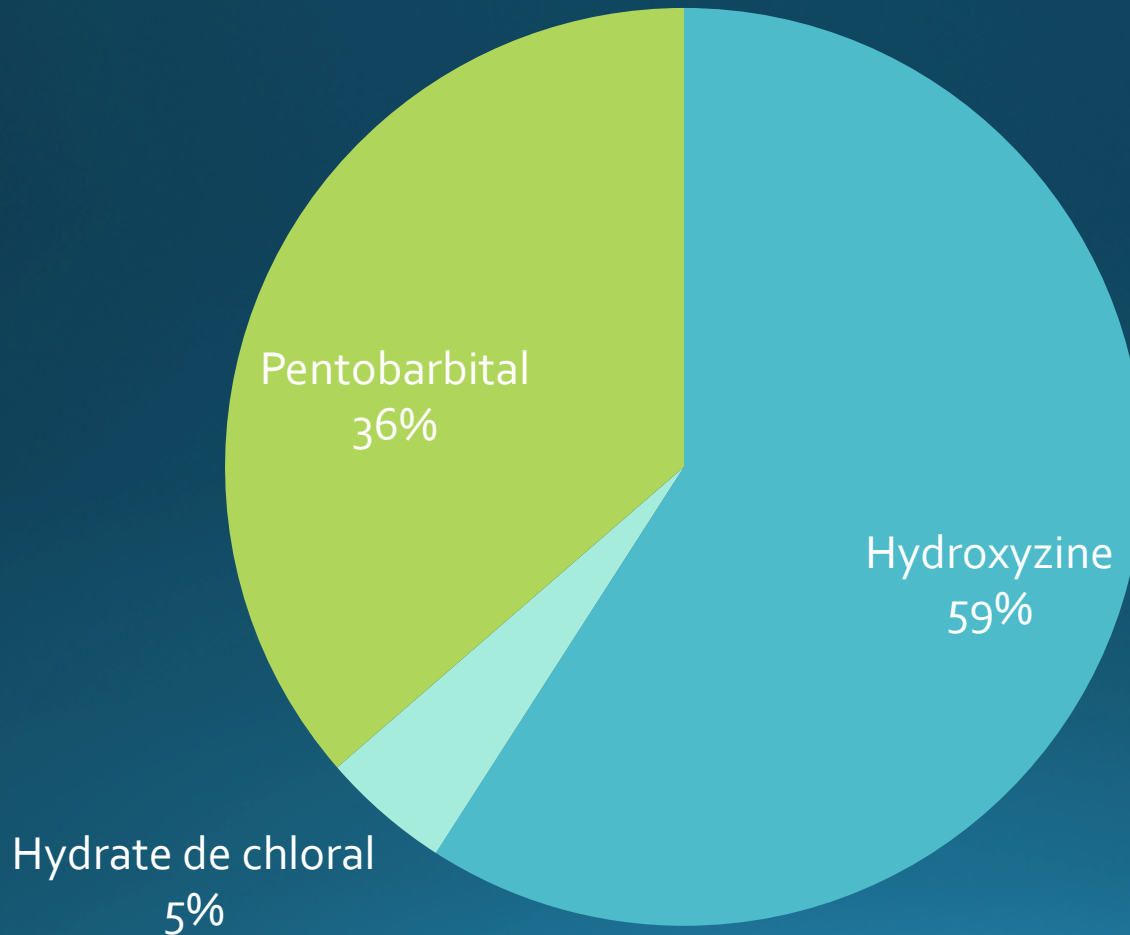
Alternative si échec de la sédation ?



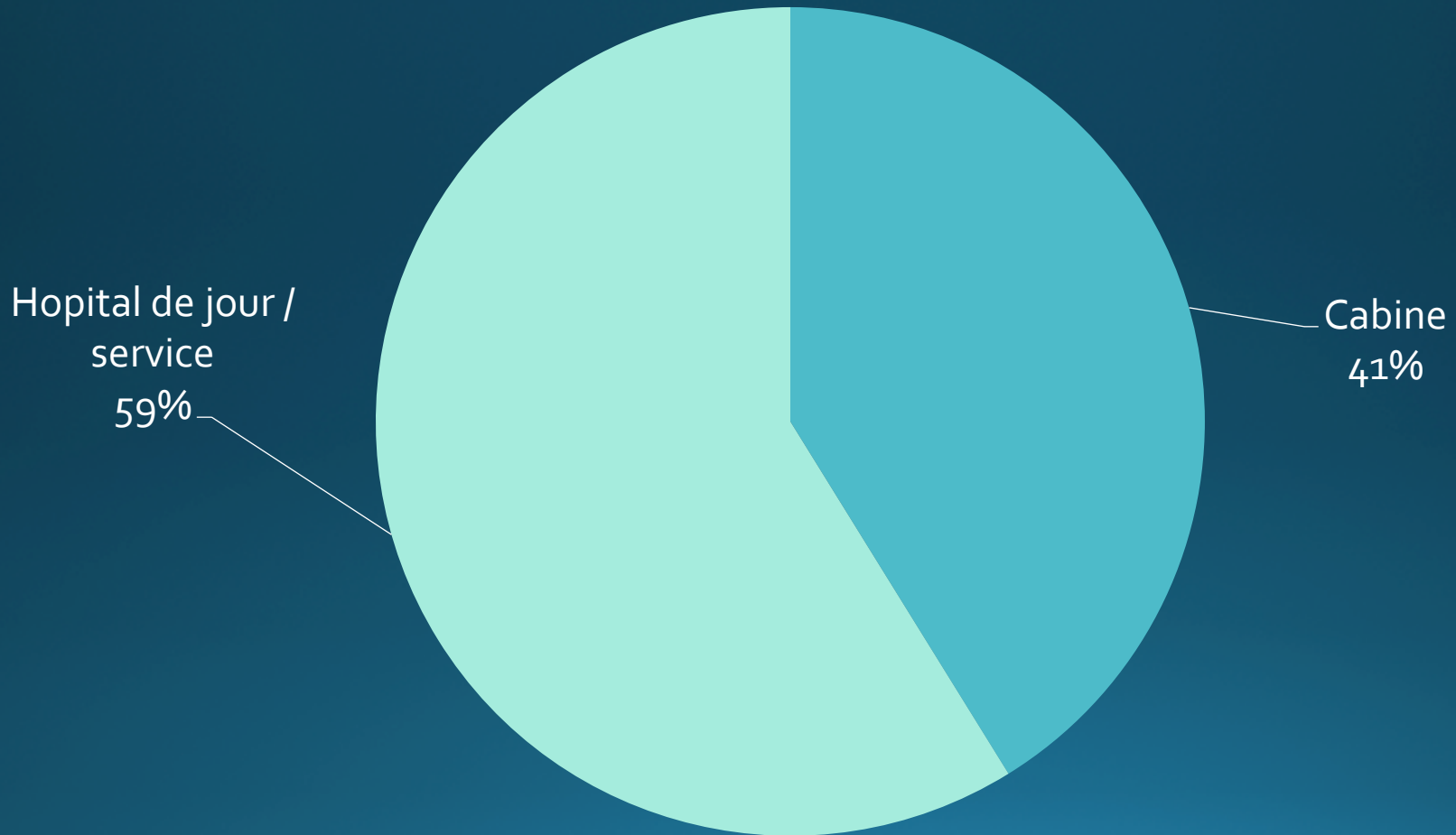
Protocole de sédation (en l'absence d'anesthésiste) ?



Molécules utilisées ?



Surveillance ?



Effets secondaires observés ?



6 centres ont répondu OUI



12 centres utilisent scope et ou
saturomètre et/ou capnographe



5 centres : absence de surveillance



3 centres : sédations prolongées /
retard de réveil de 1 à 2 fois par an



Aucun arrêt cardiaque rapporté

Discussion

- Absence de protocole et de score de sédation commun
- Absence de protocole de surveillance établi
- Peu d'effets indésirables rapportés : inexistants ou non décelés ?
- Nécessité de sédation sans anesthésiste... on s'en sort bien... mais peut-être peut-on améliorer la qualité de nos pratiques :
 - méthodes alternatives : hypnose ? IRM en jeu ? dessin animé ?
 - Session spécifique aux JFR 2019
 - Si sédation : O₂ systématique ? Scope/capnie systématique ?

Homogénéisation ?

Table 1. Definition of level of sedation⁶

	Minimal sedation (anxiolysis)	Moderate sedation 'conscious sedation'	Deep sedation	General anaesthesia
Responsiveness	Normal response to verbal stimulation	Purposeful response to verbal/tactile stimulation	Purposeful response to repeated/painful stimuli	Unroutable even to painful stimuli
Airway	Unaffected	No intervention required	Intervention may be required	Intervention usually required
Spontaneous ventilation	Unaffected	Adequate	May be impaired; assistance may be required	Frequently impaired; assistance may be required
Cardiovascular function	Unaffected	Usually maintained	Usually maintained	May be impaired

Monitoring

- Continuous monitoring of pulse oximetry, respiratory rate and electrocardiogram (ECG). *Fundamental standard.*
- Blood pressure measured at least every five minutes. *Fundamental standard.*
- Sedation and pain level monitored at least every ten minutes. *Fundamental standard.*



Impact on child and parent anxiety level of a teddy bear-scale mock magnetic resonance scanner

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Abstract

Background Pediatric magnetic resonance imaging (MRI) can be stressful. Mock MR scanners have been proven to be effective in avoiding the use of general anesthesia.

Objectives We prospectively evaluated the impact of a teddy bear-scale model of a mock MR scanner on the anxiety experienced by parents and their children during MRI without general anesthesia.

Materials and methods A 1-year prospective study before and after the installation of a mock scanner in a Pediatric Radiology Department of a university hospital. Anxiety levels were self-estimated by children ages 4 to 16 years and by the parents with a visual analogue scale (from 0, completely relaxed, to 100, extremely stressed) at three moments: in the waiting room, in the preparation room after an explanation by the MRI technologists, and at the issue of the MR acquisition images. Two groups were tested: one with a mock MR scanner, the other without. Analysis of variance (ANOVA) and Fisher exact tests were performed. Motion artifacts were studied.

Results Ninety-one children and their parents were included. The median age was 8 years (standard deviation [SD]=2). In the post mock period, the ambiance of the preparation room was considered by children as significantly more relaxing in 50% vs. 20% ($P=0.004$) and the anxiety level of children was significantly lower after the explanation, particularly in girls, but unchanged for their parents. The anxiety levels at the end of the examination were significantly lower for parents. The motion artifacts rate was lower (1.7% vs. 4.7%, $P=0.04$).

Conclusion A mock scanner was an efficient tool to improve efficiency of the explanation and to decrease anxiety in children and motion artifacts in pediatric MRI.



Fig. 1 Photograph of our teddy bear scale model of a mock MRI scanner in the preparation room

Merci de votre attention

