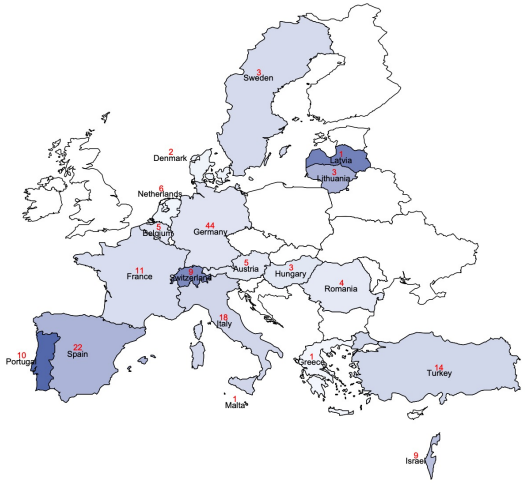

Hôpitaux Universitaires Genève

PROSA2022

PSA Practice patterns in European Emergency Care Units: Challenges & Opportunities

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Conflicts of interest

- None

Interprofessional Collaboration, Education and Research in PSA: Time for a European Collaborative Network

Cyril Sahyoun, MD

Pediatric Emergency Medicine

PROSA2018

HUG Hôpitaux Universitaires Genève

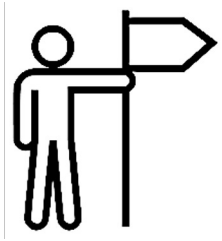
Status quo

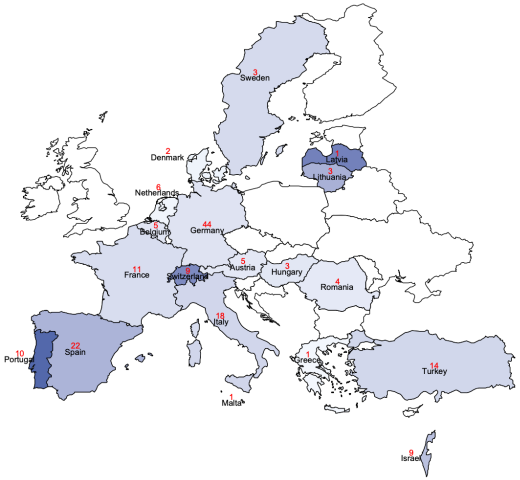
Objectives

- Where are we with ED PSA in Europe ?
  - To describe the current practice patterns
- What needs to improve ? How can we get there ?
  - Perform a needs assessment-like analysis
- What are barriers to implementing ED PSA ?

Design

Research in European Paediatric Emergency Medicine





> 20 million	10 sites
< 20 million	5 sites
Malta	2 sites
Latvia	1 site

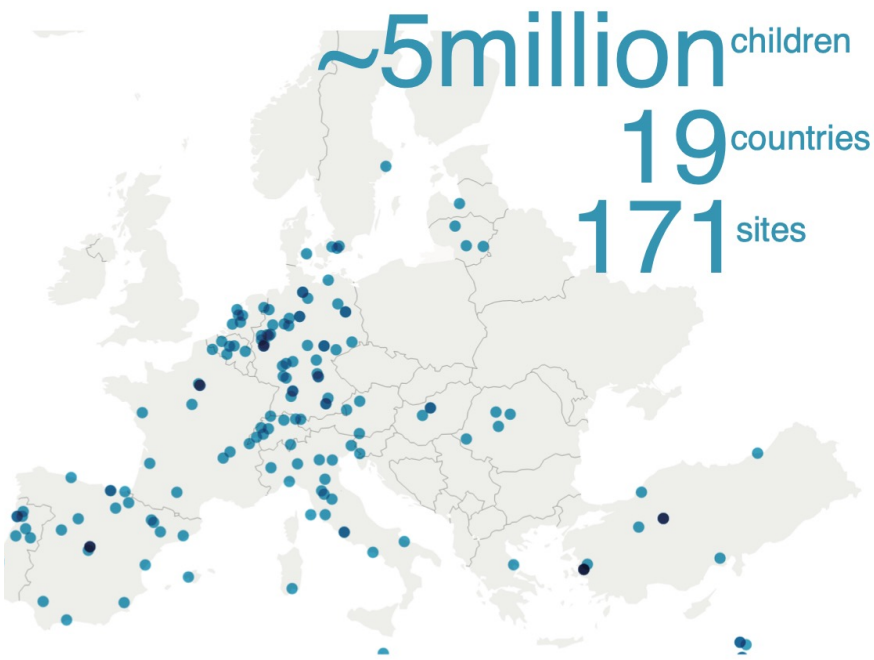
European Journal of Pediatrics. 2021 Jun;180(6):1799-1813

Domains

1. Management of a theoretical patient requiring PSA
2. Medication availability and frequency of use
3. Characteristics of staff performing PSA and their training
4. Protocols and safety aspects
5. Nursing-directed triage protocols, topical anesthetics, and minor trauma care
6. Human resources around PSA
7. Barriers to implementation of PSA
8. Staff satisfaction with their site's PSA efforts

European Journal of Pediatrics. 2021 Jun;180(6):1799-1813

Country	Number of responses	Targeted number of responses	Target response rate
Austria	5	5	100%
Belgium	5	5	100%
Denmark	2	5	40%
France	11	10	100%
Germany	44	10	100%
Greece	1	0	–
Hungary	3	5	60%
Israel	9	5	100%
Italy	18	10	100%
Latvia	1	1	100%
Lithuania	3	5	60%
Malta	1	2	50%
Netherlands	6	5	100%
Portugal	10	5	100%
Romania	4	5	80%
Spain	22	10	100%
Sweden	3	5	60%
Switzerland	9	5	100%
Turkey	14	10	100%
Total	171	108	89%[a]



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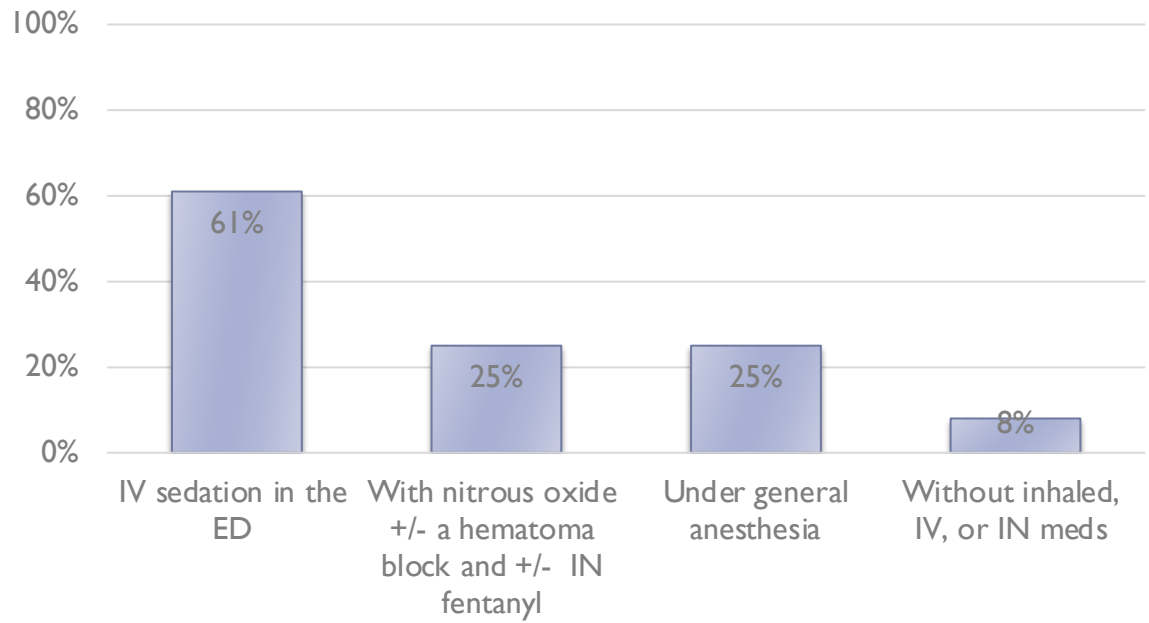
PROCEDURAL PAIN MANAGEMENT

4 year old healthy child

Displaced forearm fracture

Requires reduction and casting

PROCEDURAL PAIN MANAGEMENT



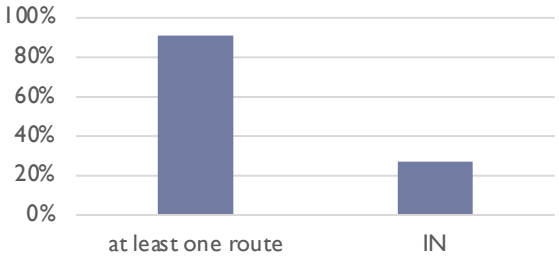
PROCEDURAL PAIN MANAGEMENT

Painful fracture reduction treated without inhaled, IV or IN drug 8%

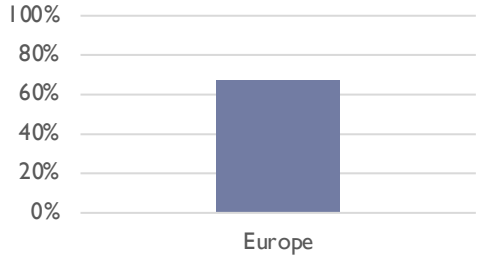
Every child should have an appropriate assessment of their baseline pain, an assessment of the anticipated pain and anxiety of the procedure, and a sedation plan for providing adequate relief of pain and anxiety

SEDATION MEDICATION

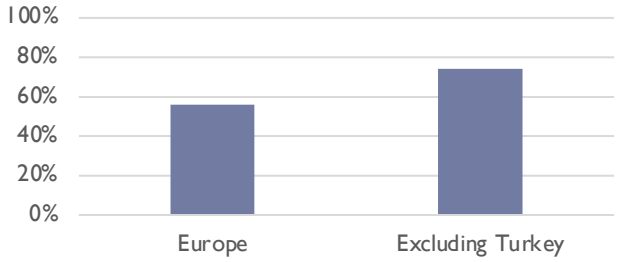
Ketamine



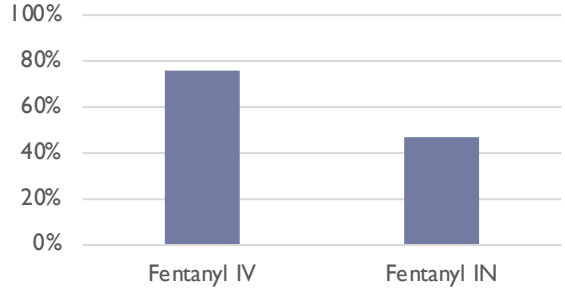
Propofol



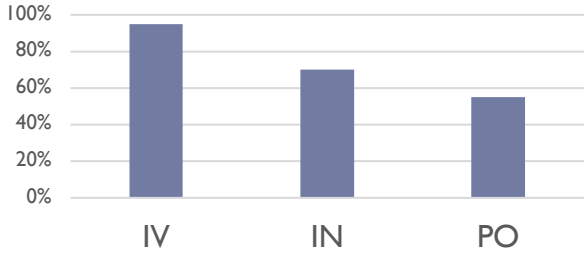
NO



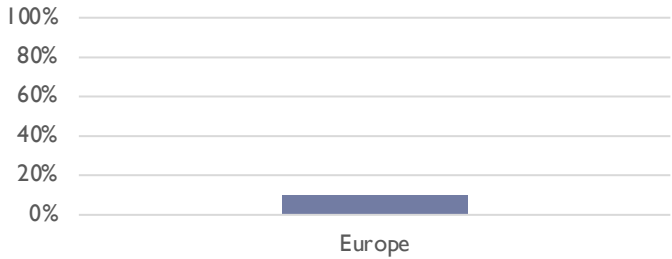
Fentanyl



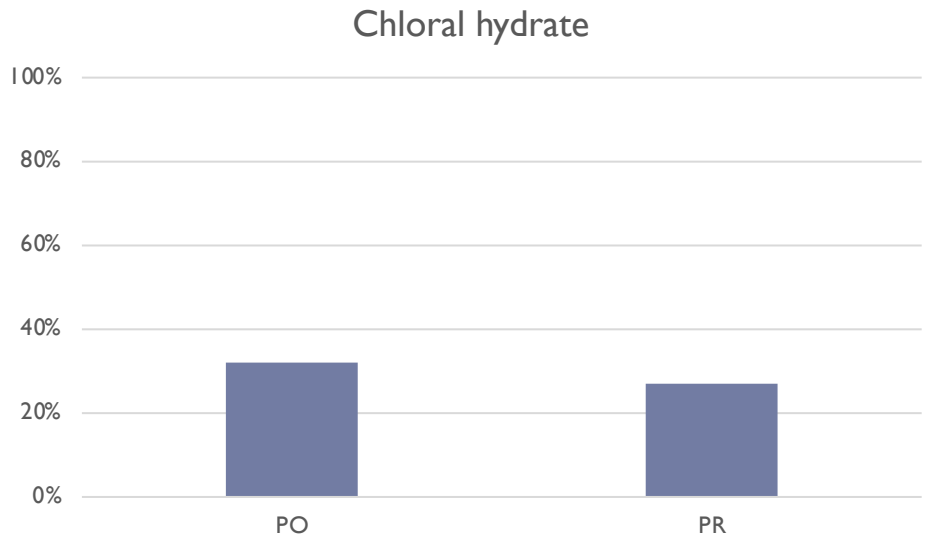
Midazolam



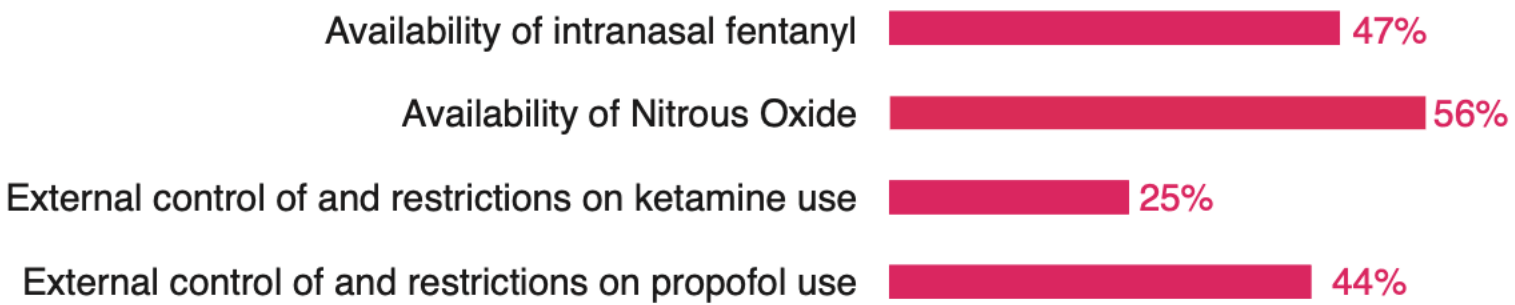
Dexmedetomidine IN



SEDATION MEDICATION



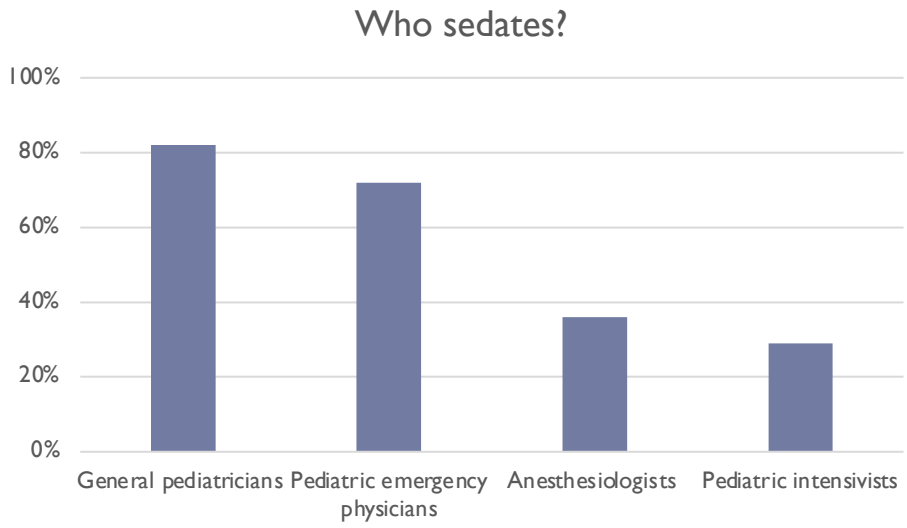
SEDATION MEDICATION

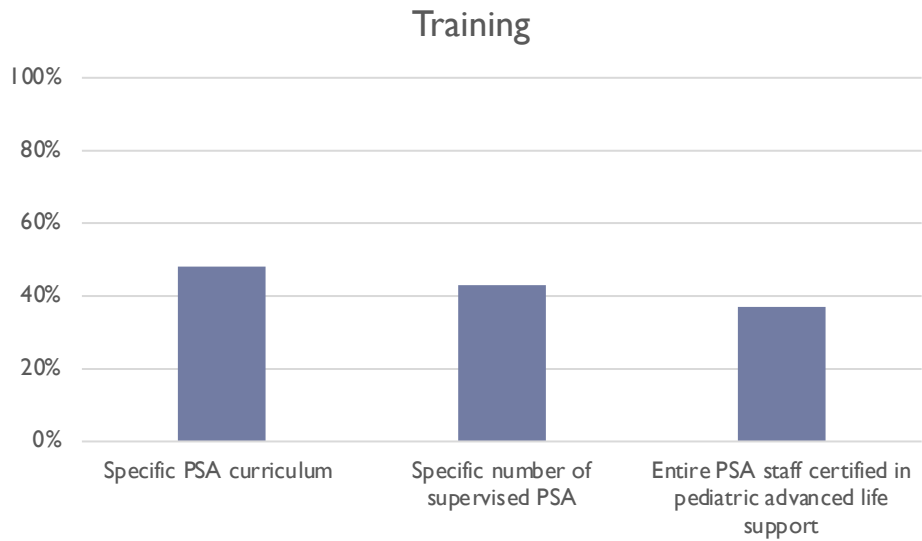


SEDATION MEDICATION

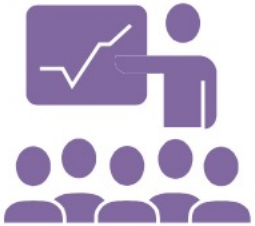
PSA sites should work on increasing the availability of the full range of PSA agents, prioritizing intranasal fentanyl, nitrous oxide and ketamine, in order to deliver optimal care for patients

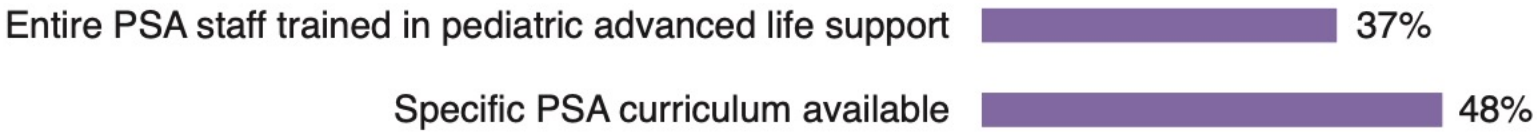
STAFF TRAINING





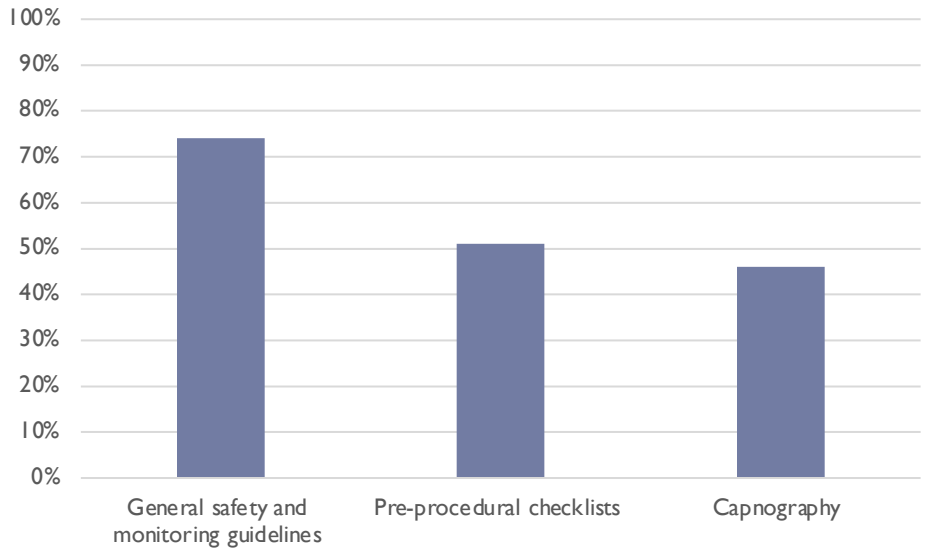
STAFF TRAINING





Physicians administering PSA should be trained in pediatric advanced life support. Specific PSA curricular training (such as didactics on pain and anxiety recognition, assessment, and management, evidence-based utilization of analgesics and sedatives, incorporation of simulation PSA training, and implementation of a rigorous, supervised sedation practice) should also be instituted in an effort to provide safe and effective PSA

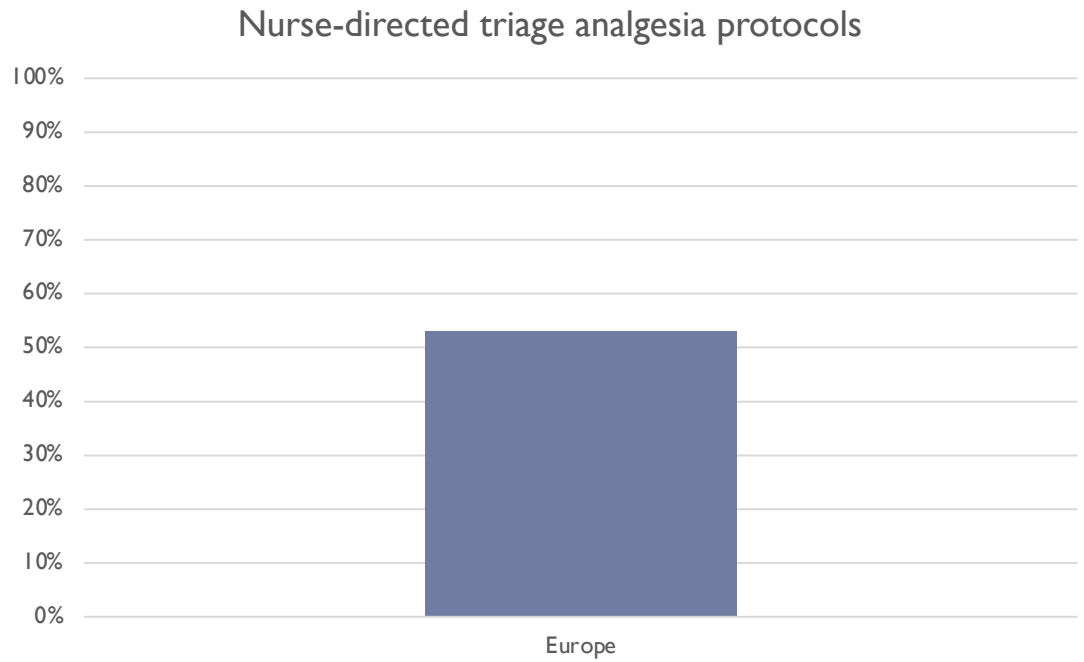
SAFETY AND MONITORING PROTOCOLS



SAFETY AND MONITORING PROTOCOLS

Universal implementation of evidence-based PSA guidelines (risk assessment and contraindications to PSA, fasting status, preparation for adverse events, continuous oxygenation and ventilation monitoring, post-procedural care and discharge criteria)

TRIAGE ANALGESIA PROTOCOLS



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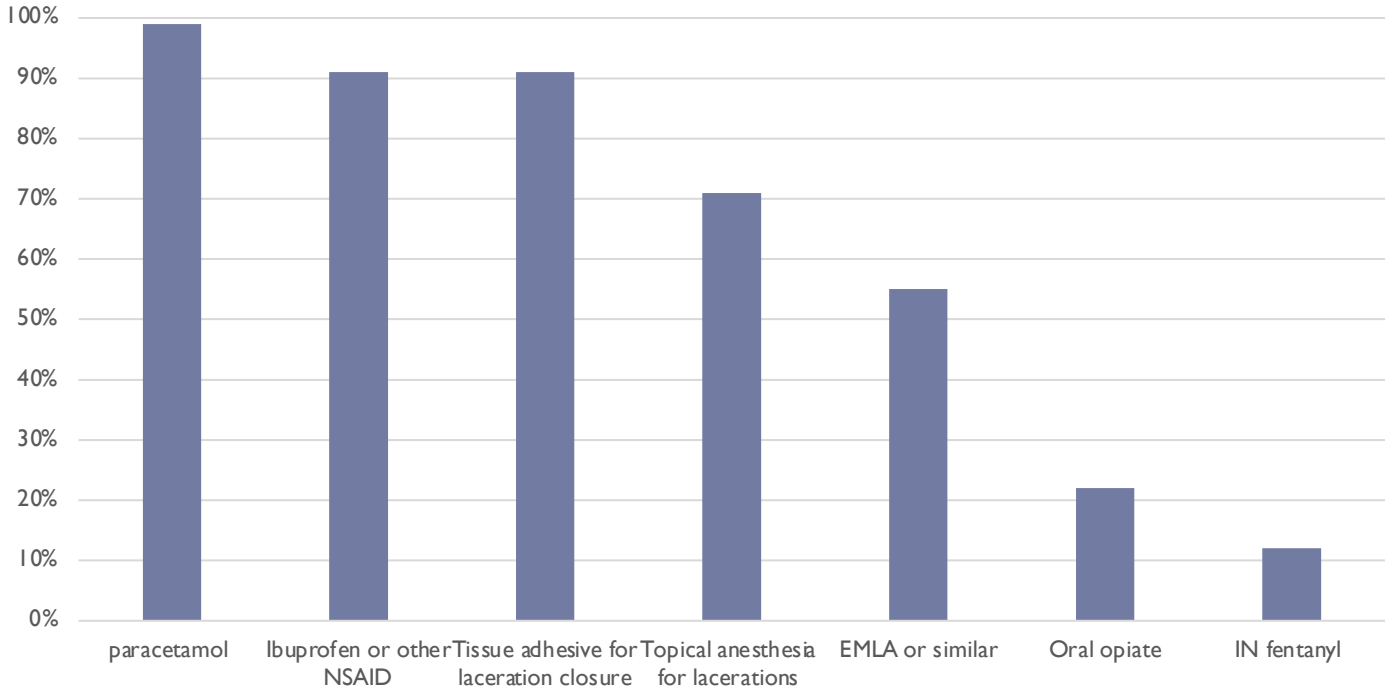

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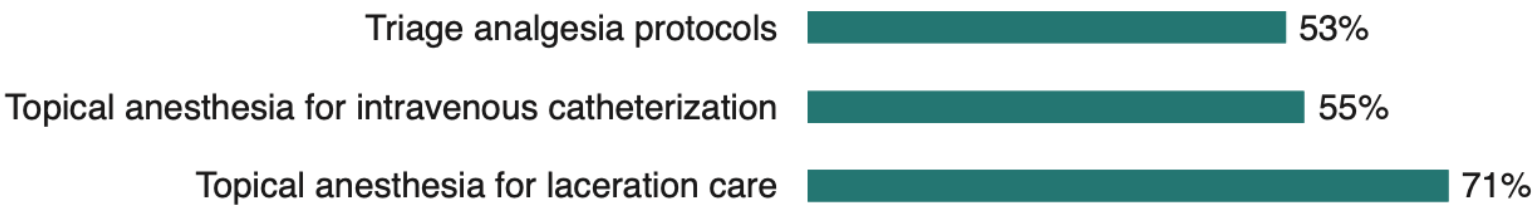
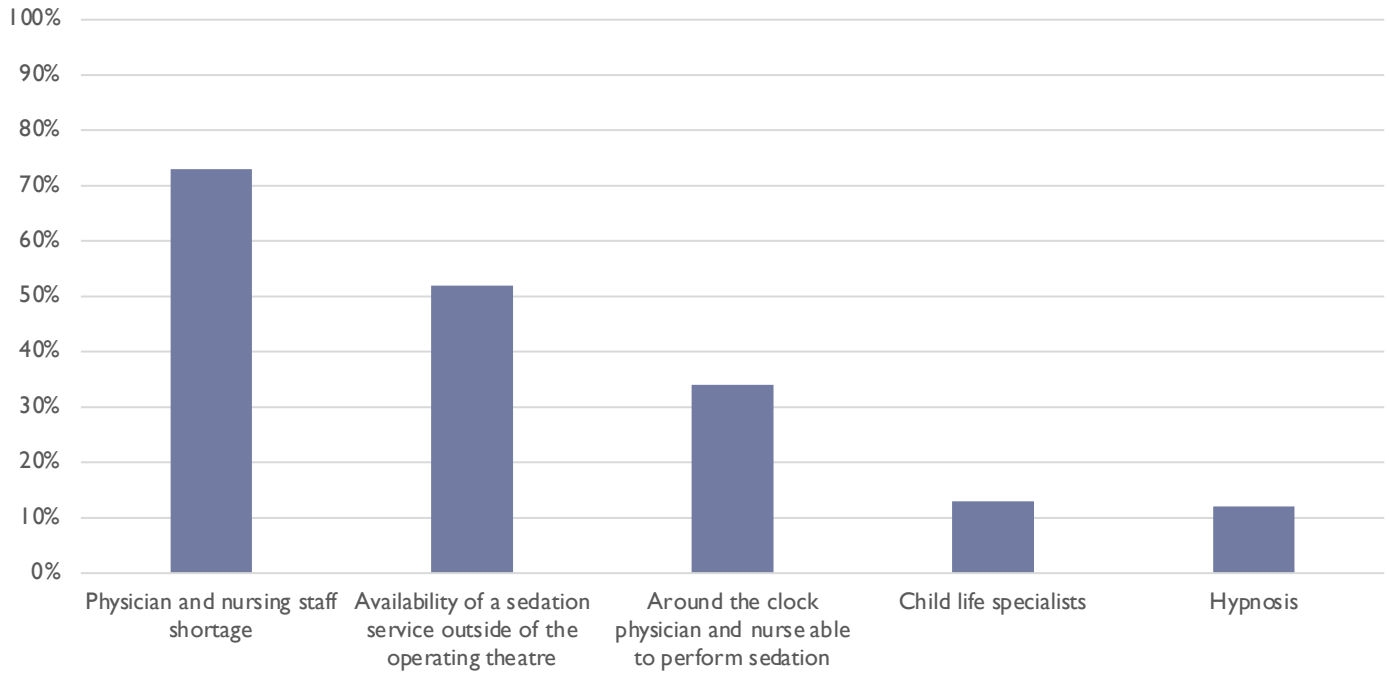


Universal establishment of triage analgesia protocols for systemic analgesics and for topical anesthetics for venipuncture, intravenous catheter placement and laceration repair.

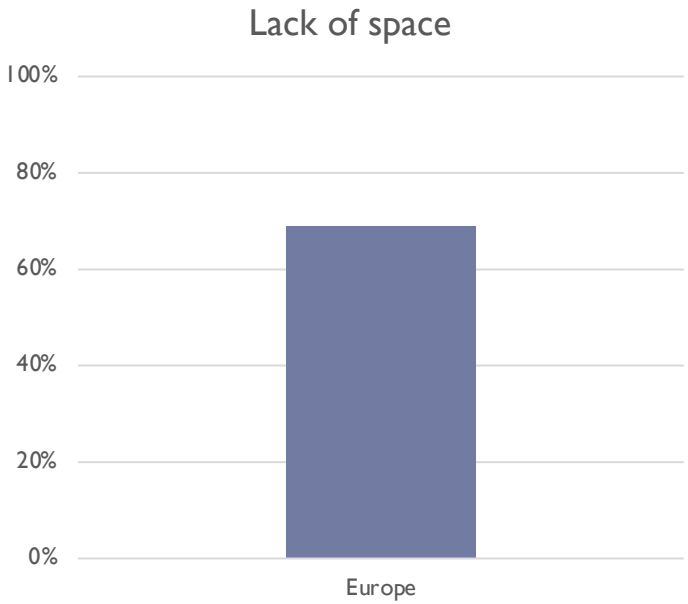
STAFF AVAILABILITY



STAFF AVAILABILITY

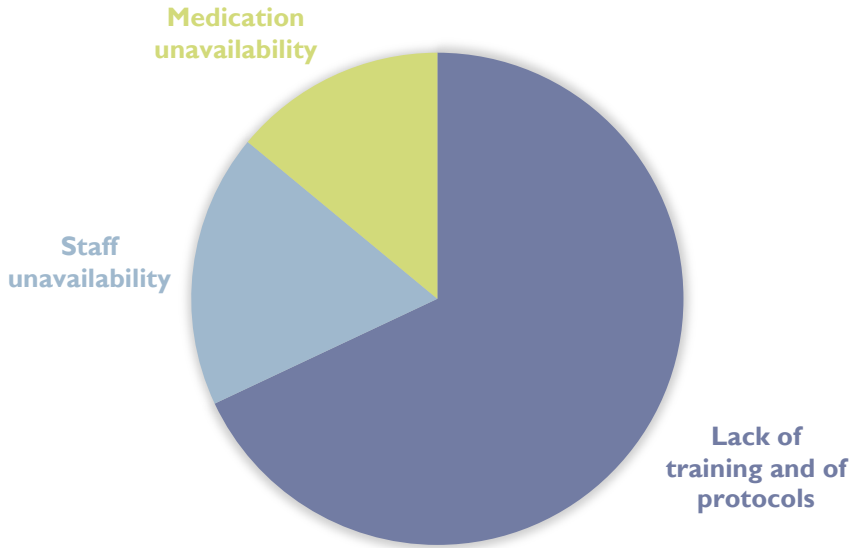
Emergency sites should employ developmentally appropriate approaches to frightened children and devise a plan for 24-hour access to sedation services. In resource-limited settings, this can be achieved using multispecialty partnerships

Other barriers to PSA implementation



Satisfaction

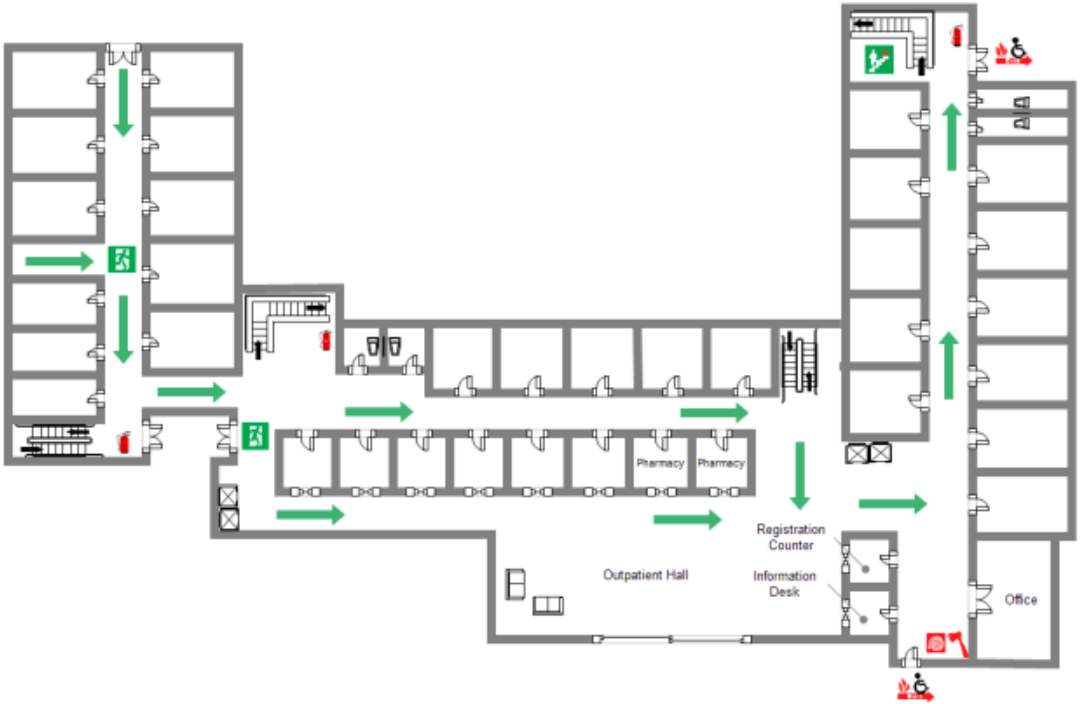
- Not satisfied : 35%



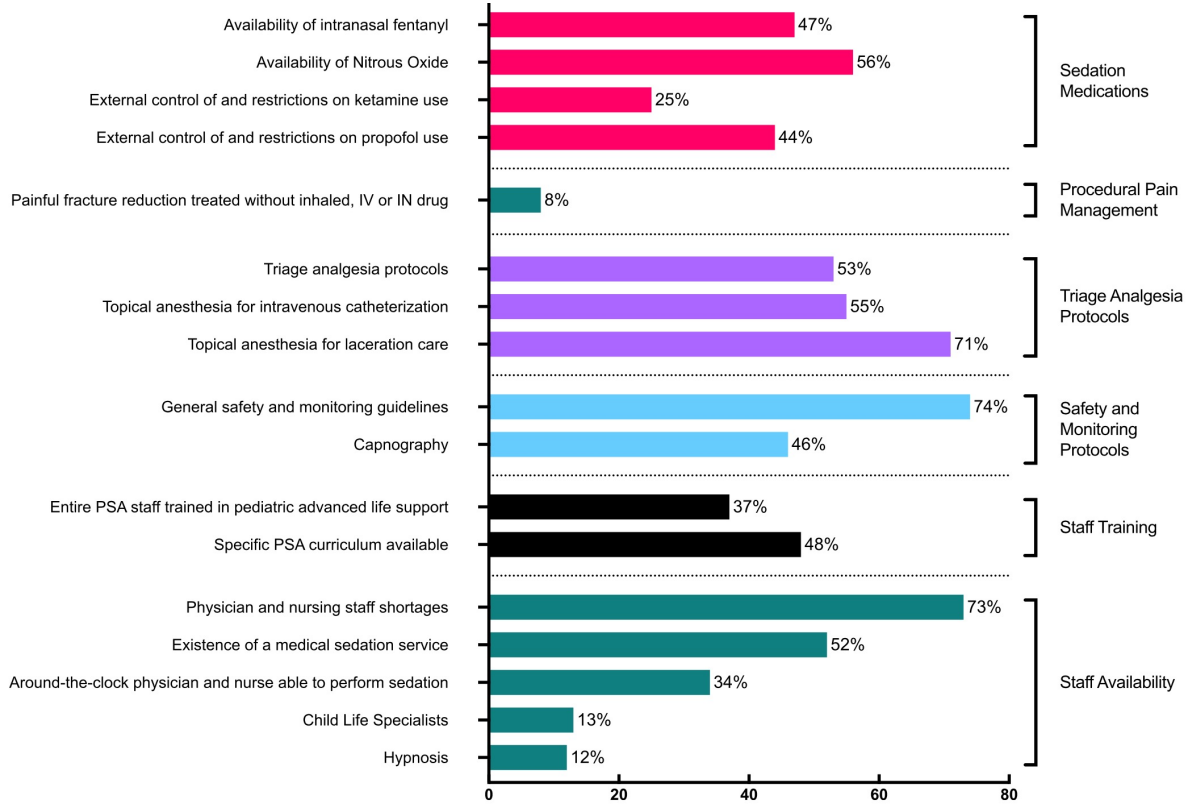
Exploratory findings

	Number of children seen per year (terciles)					Existence of a board certification in pediatric emergency medicine			
	50–12,000 $n = 60$	12,000–31,000 $n = 55$	31,000 to max $n = 57$	p	Adjusted p	No $n = 139$	Yes $n = 32$	p	Adjusted p
Specific PSA curriculum	22 (37%)	27 (49%)	33 (58%)	0.26	0.555	60 (43%)	22 (69%)	0.015[a]	0.049[a]
Specific number of supervised PSA	26 (44%)	22 (40%)	25 (44%)	0.687	0.687	51 (37%)	22 (69%)	0.001[a]	0.007[a]
General safety rules for administering sedation	43 (73%)	39 (71%)	45 (80%)	0.11[a]	0.392	98 (71%)	29 (91%)	0.058[a]	0.108
PSA checklist	27 (46%)	27 (49%)	33 (58%)	0.14[a]	0.392	66 (48%)	21 (66%)	0.125[a]	0.203
Capnography	31 (53%)	22 (40%)	26 (46%)	0.404	0.589	59 (43%)	20 (63%)	0.04	0.104
Medical sedation service	30 (51%)	32 (58%)	27 (47%)	0.506	0.590	79 (57%)	10 (31%)	0.009	0.039[a]
Nurse-directed triage analgesia	24 (41%)	26 (47%)	40 (70%)	0.004	0.056	70 (50%)	20 (63%)	0.215	0.291
Hypnosis	12 (20%)	4 (7%)	9 (16%)	0.136	0.392	21 (15%)	4 (13%)	0.707	0.707
Child life therapists	5 (9%)	2 (4%)	10 (18%)	0.044	0.308	13 (9%)	4 (13%)	0.592	0.641

What we still do not know



Where to ?



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Thank you

Pediatric procedural sedation and analgesia in the emergency department: surveying the current European practice

Cyril Sahyoun[1] · Aymeric Cantais[1] · Alain Gervaix[1] · Silvia Bressan[2] · Ruth Löllgen[3] · Baruch Krauss[4] · on behalf of the Pediatric Emergency Medicine Comfort and Analgesia Research in Europe (PemCARE) group of the Research in European Pediatric Emergency Medicine

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Thank you

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