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# Physically restraining children for induction of general anaesthesia: survey of consultant paediatric anaesthetists.

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# Pediatric Anesthesia

## Physically restraining children for induction of general anaesthesia: survey of consultant paediatric anaesthetists.

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4 consultant paediatric anaesthetists.  
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28 Running title: Physically restraining children: survey  
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3 (A) Abstract  
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5 Objectives: To discover whether any consensus exists among Association of  
6 Paediatric Anaesthetists of Great Britain and Ireland (APA) members regarding use  
7 and acceptability (or otherwise) of physical restraint.  
8

9 Background: Despite growing recognition of children's right to be consulted  
10 regarding their healthcare, the issue of how to proceed when faced with a child  
11 unwilling to undergo induction of general anaesthesia remains relatively unaddressed.  
12

13 Methods: APA members were surveyed regarding their use or avoidance of physical  
14 restraint and alternate techniques to facilitate induction; factors affecting choice of  
15 technique; and extent of preoperative discussion. The anonymous online survey used  
16 both structured and free-text responses.  
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18 Results: Of 596 surveys, 310 were returned, a 52% response rate. Use of physical  
19 restraint and extent of restraint employed declines with increasing child age.  
20

21 Distraction techniques are frequently employed for children under 6 years old, with  
22 use of sedative premedication increasing as child age increases. Urgency of  
23 procedure, developmental delay, and preoperative discussion all have an affect.  
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25 Comments demonstrated a wide range of views and lack of consensus on what  
26 constitutes physical restraint, and what degree of restraint, if any, is acceptable.  
27

28 Conclusion: Our results are similar to US Society of Pediatric Anesthesia members,  
29 suggesting this remains an issue internationally. Consideration of practices in other  
30 specialties give some guidance. Our survey shows a range of views as to what  
31 physical restraint is or involves, and what constitutes acceptable practice regarding  
32 use or avoidance of physical restraint. We were unable to demonstrate consensus.  
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34 (A) Keywords: physical restraint; general anaesthesia; child  
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4 (A) Introduction

5 The UK General Medical Council publication “0-18 years: guidance for all doctors”<sup>1</sup>  
6 formalised expectations of all doctors who treat children. This publication prompted  
7 us to reconsider a common situation which has received relatively little attention in  
8 the anaesthetic literature: the child who refuses or resists induction of general  
9 anaesthesia. ‘At what point does restraint become abuse?’<sup>2</sup> Although the General  
10 Medical Council had not received any formal complaints along these lines to  
11 December 2008 (personal communication), parents may complain in the press<sup>3</sup>. We  
12 wondered whether any consensus exists among paediatric anaesthetists on what  
13 constitutes acceptable and unacceptable practice.  
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29 (A) Materials and Methods

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31 With permission from the Association of Paediatric Anaesthetists of Great Britain and  
32 Ireland (APA)’s Scientific Committee, we emailed a survey invitation to all full and  
33 affiliate members of the APA. Emails were sent in early December 2008, with  
34 reminders in January and February 2009. The emails included a link to the  
35 anonymous online survey (hosted by Bristol Online Surveys [BOS], University of  
36 Bristol, UK, <http://www.survey.bris.ac.uk/>; Appendix 1). A combination of structured  
37 and free-text responses addressed details of anaesthetic practice; use of, and attitudes  
38 towards, physical restraint and alternatives including factors affecting choice of  
39 technique; and extent of preoperative discussion. Data from structured responses were  
40 analysed using BOS’ integral software, yielding simple descriptive frequencies. Free  
41 text comments underwent thematic analysis<sup>4</sup>.  
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58 Our local Regional Ethics Committee chairman was approached, in line with normal  
59 UK practice, and felt that formal ethics committee approval was not necessary.  
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3 (A) Results  
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6 There were 586 initial invitation emails sent, with APA membership growing by 10  
7 during the reminder period. The 78 APA members without email addresses on file did  
8 not receive a survey invitation. We received 310 completed surveys, a response rate  
9 of 52%.  
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17 (B) Personal details  
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20 Respondents' paediatric anaesthetic commitment ranged from less than one to 10  
21 sessions per week (median 4 sessions, mean 4.4 sessions per average week). There  
22 were 91 (21.4%) respondents with 2 or fewer paediatric anaesthetic sessions per  
23 week, while 47 (15.2%) had 8 or more.  
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29 Time in paediatric anaesthetic practice at consultant level ranged from 1 to 40 years,  
30 with median 10 years and mean 12.2 years.  
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36 (B) Techniques used to enable induction of anaesthesia  
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39 Table 1 and figures 1 and 2 show how respondents' preferred techniques, and those  
40 avoided, vary with the child's age. A majority rarely or never allow a child to be  
41 restrained by staff members, the size of this majority growing with increasing age of  
42 child from 214 (74%) under 1 year to 261 (88%) over 6 years. However, restraint by  
43 parents was more commonly used for younger children (28% under 1 year, 31% aged  
44 1 to 3 years, falling to 11% at 3 to 6 years and less than 3% over 6 years). Similarly,  
45 fewer respondents avoided restraint by parents than by staff (parental restraint rarely  
46 or never used by 19% under 1 year, 13% aged 1 to 3 years, 28% aged 3 to 6 years and  
47 65% over 6 years).  
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3 Partial restraint, as described in the questionnaire wording (holding still to enable iv  
4 access or inhalation induction), was always or mostly used by a sizeable minority of  
5 respondents in younger age groups (28% under 1 year and 29% 1 to 3 years, falling to  
6 16% aged 3 to 6 years and only 8% over 6 years). In children 6 years and older, 47%  
7 rarely or never used partial restraint.  
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17 Respondents displayed an increasing tendency to use sedative premedication with  
18 increasing age of child. Sedative premedication was always or mostly used *initially* in  
19 5% under 1 year, 11% aged 1 to 3 and 3 to 6 years, and 8% over 6 years and  
20 *secondarily* in 8%, 21%, 28% and 34% respectively. Distraction was always or  
21 mostly used by 42% for babies, 69% for 1 to 3 year olds, 72% for 3 to 6 year olds and  
22 58% over 6 years.  
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34 Figure 3 demonstrates that while a majority would alter their induction technique in  
35 response to objections from either a child (84%) or a parent (77%), opinion was  
36 almost evenly divided on objections raised by other staff members (147 versus 124,  
37 54% would alter technique). Free text comments similarly divided between statements  
38 that concerns of experienced perioperative staff were both worth heeding and  
39 practically speaking difficult to ignore, and those pointing out that anaesthetic  
40 technique is agreed between anaesthetist, child and parents, not third parties. Figure 3  
41 also shows a majority view (80% - 82%) that urgent procedures and special needs  
42 children require greater flexibility.  
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58 (B) Preoperative discussion  
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3 The majority of respondents routinely or sometimes discuss the full range of non-  
4 restraint and restraint techniques with parents preoperatively (72% – 85% across the  
5 different techniques). The exception was whole-child restraint by staff members  
6 which would not be mentioned preoperatively by 67% (Figure 4). Many of the  
7 ‘maybe’s used free text to describe circumstances in which they would discuss  
8 physical restraint by staff, mostly relating to special needs children, and in some cases  
9 to say “we will not do this” to parental suggestions. Figure 5 illustrates the majority  
10 views that prior parental agreement is important (85%), and that pre-discussed  
11 physical restraint may be more acceptable when surgery is urgent rather than elective  
12 (88%), and in the special needs child who could not otherwise be managed (78%). A  
13 substantial minority (40%) felt that staff disagreement with the use of physical  
14 restraint was not a contraindication, provided the parents agreed with the plan.  
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34 (B) Themes emerging from free text comments

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36 © *‘How I do it’ suggestions* formed the largest set of comments. Some were brief (eg 23  
37 ‘i.m. ketamine’, 53 ‘premed’). Many gave detailed descriptions of distraction/visual  
38 imagery techniques, or of example conversations with children and parents. Giving  
39 children choices and changing technique depending on their expressed preferences  
40 came up repeatedly, while hypnotherapy and using play therapists or psychologists  
41 were mentioned by only a handful. Some avoid any hint of physical restraint, while  
42 others described just how they would restrain a child (for example, holding hands still  
43 but allowing them to kick with their legs, have the parent hold them).  
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57 © *Attitudes toward restraint* was another common theme, ranging from “I wouldn’t ever  
58 do it” through “Restraint except by parents is not usually desirable” to the pragmatic  
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3 “Restraint is not so much "acceptable", but rather a necessity in some situations”

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6 “There can be no hard and fast rules”. Car seats and seat belts were mentioned as  
7  
8 examples of everyday use of physical restraint in children’s lives, with others pointing  
9  
10 out that “For children with special needs, restraint may be a necessary part of their  
11  
12 daily routine”. Conversely, other respondents referred to “gorilla induction” alluding  
13  
14 to a rather different image of what physical restraint is. About equal numbers of those  
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16 who commented felt that a secure parental cuddle is or is not an example of using  
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18 physical restraint, similarly holding limbs for intravenous cannulation.  
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24 Some respondents commented that sedative premedication might be less desirable as  
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26 “The patient will not remember that the experience was not as bad as they thought it  
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28 would be”. Several mentioned that increasing observer comfort (staff or parents) is  
29  
30 not necessarily better for the child<sup>5</sup>. “Would your answers ...be different for sedative  
31  
32 premedication?” yielded 133 no, 77 yes and 69 maybe responses. Although this  
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34 question could have been worded better, most respondents used free text to clarify,  
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36 divided similarly between “Restraint is restraint, whether physical or chemical” and “I  
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38 don't buy that it's the same as physical restraint”.  
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46 © *Flexibility* and organisational considerations were mentioned frequently as ways to  
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48 potentially avoid using physical restraint. Comments subdivided into willingness (or  
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50 not) to reorder a list and send a child back to the ward for premedication or to return  
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52 another day; changing induction (or not) in response to a child or parent’s preference;  
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54 statements that “all situations are different as are all children” and that there is no one  
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56 best method, especially where special needs children are concerned; and surgical  
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58 urgency removing flexibility and perhaps making physical restraint more common.  
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6 © *Communication* was mentioned repeatedly. The children themselves may have  
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8 rational fears that can be addressed, or may be unsure why they have come to  
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10 hospital. Games, stories or visual imagery may be used. “It is all about discussion  
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12 with the parents”, beforehand (what to expect, what we will or will not consider, their  
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14 child’s safety remaining paramount), during (ongoing agreement to continue) and  
15  
16 after (particularly following a difficult induction). Staff members may not understand  
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18 our rationale without explanation, and may be unwilling to restrain children, while  
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20 sometimes too willing to talk when “a single voice” is optimal.  
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27 © *Consent issues*, and *competence* to refuse treatment were discussed by many.  
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29 “Informed consent is mandatory but the details need to be guided by the  
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31 parents'/guardians' desire to know the details” was expressed repeatedly, while several  
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33 pointed out that “Often a parent or guardian may not appreciate our difficulties  
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35 especially in the older child” who may in fact be competent to refuse treatment.  
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37 Finally, several comments agreed that this is a difficult area.  
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3 (A) Discussion  
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6 This survey of APA members uncovers a wide range of opinions on the acceptability  
7 or otherwise of physically restraining unwilling children to facilitate induction of  
8 anaesthesia in a variety of circumstances and ages, from “I despise restraint” and “I  
9 wouldn’t do it” to “I don't see a problem with physical restraint provided that it is  
10 administered in an appropriate manner”, “I would not hesitate to use physical restraint  
11 by staff members if patient's safety required it”, and “Never say never”. Many  
12 respondents generously shared their personal tactics for circumventing objections.  
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20 Our response rate was similar to Lewis et al’s survey of US Society of Pediatric  
21 Anesthesia members<sup>6</sup>. They also showed decreasing use of physical restraint with  
22 increasing child age, and considerable variation in attitudes towards restraint. They  
23 found peak use of sedative premedication in 1-4 year olds, while our respondents’ use  
24 of premedication was greatest in over 6 year olds.  
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39 UK Royal College of Nursing guidelines on procedural restraint<sup>7</sup>, specifically  
40 referenced by some respondents, make a distinction between “restraining” a child  
41 (unacceptable), and “holding still” (permissible), the differences being the force  
42 applied (presumably subjective), and consent, the child having given permission to be  
43 held still (or perhaps, consenting to the procedure thus facilitated?) Our survey  
44 respondents disagreed on whether such actions as restraining an arm in order to site a  
45 cannula, or a secure parental cuddle, are physical restraint. Opinion divided fairly  
46 evenly on whether sedative premedication should be considered chemical restraint,  
47 and whether this is actually different from physically holding a child.  
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3 The UK Royal College of Anaesthetists states<sup>8</sup> that “Parents (or carers) should,  
4 wherever possible, be involved in all aspects of care and decisions regarding  
5 management of their children” and that “There should be discussions with the child  
6 and/or parent about methods of induction”. Communication and consent/competence  
7 comprised two recurrent themes in our free text responses.  
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17 The law on consent in children varies between countries. In England and Wales, a  
18 child who is not competent to refuse can legally be anaesthetised against their will,  
19 provided a person with parental responsibility consents<sup>9</sup>. **Almost two thirds (60%)** of  
20 our respondents would apply physical restraint despite a child’s objections where a  
21 parent consented during preoperative discussion (figure 5). Consent may be  
22 withdrawn at any point even after a procedure has started, in which case it is only  
23 legal to continue if to stop at that point would be unsafe. Regarding induction of  
24 general anaesthesia, a parent could withdraw consent to continue if they became  
25 unhappy with physical restraint being used. However, stopping mid-way through an  
26 inhalation induction may well be unsafe. This was mentioned by survey respondents  
27 as a topic for preoperative discussion.  
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46 Colleagues in paediatric nursing, dentistry, oncology and intensive care also manage  
47 noncompliant children and may have lessons for us<sup>10</sup>. Jeffery comments<sup>11</sup> that  
48 physical restraint might be interpreted as child abuse, particularly if parents are not  
49 kept informed. Current acceptable practice may later be redefined as abusive.  
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53 Alternatively, physical restraint might be justified retrospectively by its effects of  
54 enabling a beneficial procedure to occur. Apparently<sup>12</sup> physical restraint is a frequent  
55 intervention in paediatric nursing, yet rarely discussed or addressed in research.  
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6 A review of restraint use (defined as both physical and ‘physiological’ meaning  
7 premedication) in paediatric dentistry<sup>13</sup> described a range of parental attitudes towards  
8 physical restraint from generally unacceptable to approved by 90% of parents in  
9 different studies. The majority view within British paediatric dentistry is that  
10 “physical restraint crosses the boundaries of what is considered acceptable”<sup>14</sup>. UK  
11 General Dental Council guidance states that “only in the most exceptional  
12 circumstances could the use of physical restraint be justified”<sup>15, 16</sup>. Nevertheless  
13 Kupietzky argues that physical restraint coupled with conscious sedation be used in  
14 preference to general anaesthesia<sup>17</sup>.  
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29 Paediatric oncology is another area in which sedation plus physical restraint may be  
30 used to avoid general anaesthesia. An Australian study<sup>18</sup> discovered that although  
31 staff perceived sedation with physical restraint (required in 94% of procedures under  
32 sedation) as well tolerated, many parents expressed disquiet, with 90% of parents  
33 requesting general anaesthesia for future procedures.  
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43 Several survey respondents mentioned paediatric intensive care unit (PICU) use of  
44 restraint as an example of pragmatism or necessity, potentially justifying similar  
45 anaesthetic practice. A postal questionnaire<sup>19</sup> revealed that 68% of UK PICUs  
46 practised one or more techniques of physical restraint to avoid treatment interference  
47 by patients. Many (47%) did not obtain parental consent prior to restraining children,  
48 and no units required written consent. An earlier telephone survey<sup>20</sup> of UK PICUs  
49 found that 38% ‘routinely’ used physical restraint, suggesting that this may be  
50 becoming more prevalent or more acceptable practice.  
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6 Limitations of this survey include a response rate of 52% of the survey population of  
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8 APA members, thus views expressed may not be more widely applicable, although  
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10 similar to US SPA members<sup>6</sup>. Survey questions were not validated, although they  
11  
12 were reviewed by APA's Scientific Committee. Question wording could have been  
13  
14 clearer as commented by 21 respondents (6.8%). Thematic analysis and reporting  
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16 descriptive data from free text comments may be affected by author preconceptions.  
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18 Free text comments illustrated a lack of agreement on what constitutes physical  
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20 restraint; absence of a common definition may confuse interpretation.  
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27 This online survey of APA members has discovered wide variations in practice, and a  
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29 range of views as to what physical restraint is or involves, and what constitutes  
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31 acceptable practice regarding use or avoidance of physical restraint. We were unable  
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33 to demonstrate consensus.  
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6 our survey questions and granting permission to survey APA members; Craig Millar  
7 for forwarding the email invitations and reminders; and all APA members who took  
8 the survey.

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For Peer Review



## (A) Appendix – the questionnaire

## (B) Physical restraint for induction of general anaesthesia in children

The child refusing induction of general anaesthesia is a commonly encountered yet seldom addressed dilemma. There are currently no national guidelines or standards to which we could point to confirm that our own practice is acceptable in the event of a complaint against us, and little published literature (much of which refers primarily to specialties other than anaesthesia). We therefore wish, via this survey of APA members, to clarify current practice among paediatric anaesthetists in the UK, which could be incorporated into guidelines that will protect all of us.

The online survey is anonymous and will take approximately 10 minutes to complete.

'Parent' is used throughout to denote persons with parental authority.

## (B) About you:

- 1) How many paediatric sessions do you anaesthetise for per week (average)?  
[drop-down <1-10]
- 2) How many years have you been in paediatric anaesthetic practice?  
[text box]

## (B) Your own practice:

3) How frequently do you use the following in your practice? Please select a frequency for each technique and age-group. [drop-downs in table, 6 options always-never]

Age-group:	0-1 year	1-3 years	3-6 years	Over 6 years
a) sedative premedication (initially)				
b) sedative premedication (following poor cooperation)				
c) distraction (eg toy, story)				
d) partial physical restraint (eg facemask against face, limb for iv access; hands to prevent interference with facemask or iv)				
e) whole child restraint by parent (secure cuddle)				
f) whole child restraint by staff member(s)				
g) other technique				

4) If you use another technique than those listed above, please describe it. [text box]

Which of the following affect your decision to use any of a-g above with an individual child?

Are you any more or less likely to use any of the techniques listed under the circumstances below?

- 5) If the patient states "I don't want it"? [yes/no]
  - a) How would your management change? [text box]
  - b) What age range of patients? [text box]
- 6) If parent(s) unhappy? [yes/no]
 

How would your management change? [text box]
- 7) If staff member unhappy (eg nurse)? [yes/no]
 

How would your management change? [text box]
- 8) Urgent/emergency procedure (vs elective)? [yes/no]
 

How would your management change? [text box]
- 9) If child has special needs? [yes/no]
 

How would your management change? [text box]

## (B) Preoperative information:

Which of the following possible techniques to facilitate induction of general anaesthesia do you routinely discuss with children and parents preoperatively?

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3 10) Initial sedative premedication? [yes/no/maybe]  
4 11) Sedative premedication following poor cooperation? [yes/no/maybe]  
5 12) Distraction (eg toy, story, play therapist)? [yes/no/maybe]  
6 13) Partial physical restraint such as holding facemask against  
7 child's face, holding limb to obtain iv access, or holding hands to  
8 prevent interference with facemask or iv? [yes/no/maybe]  
9 14) Whole child restraint by parent (secure cuddle)? [yes/no/maybe]  
10 15) Whole child restraint by staff member(s) eg ODP or nurse?  
11 [yes/no/maybe]  
12 16) Another technique: please describe: [text box]

13 Does preoperative discussion render physical restraint techniques  
14 more acceptable in your opinion? (Regardless of whether you use any  
15 of these techniques yourself)

- 16 17) If parent(s) agree? [yes/no]  
17 18) If parents are divided in opinion? [yes/no]  
18 19) If parent(s) agree but child objects? [yes/no]  
19 What age of child? [text box]  
20 20) If staff member (eg nurse) is unhappy? [yes/no]  
21 21) In the urgent or emergency (versus elective) setting? [yes/no]  
22 22) In the child with special needs? [yes/no]  
23 23) Would your answers in this section be different for chemical  
24 restraint (sedative premedication)? [yes/no/maybe]  
25 Why, or why not? [text box]

26 (B)Your comments

- 27 24) Is there anything else you would like to add, clarify or qualify?  
28 [text box]

29 And finally:

30 Thank you very much indeed for taking the time to complete this  
31 survey. We intend to email results in due course, for your interest.

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3 Objectives: To discover whether any consensus exists among Association of Paediatric  
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5 Anaesthetists of Great Britain and Ireland (APA) members regarding use and  
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7 acceptability (or otherwise) of physical restraint.  
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10 Background: Despite growing recognition of children's right to be consulted regarding  
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12 their healthcare, the issue of how to proceed when faced with a child unwilling to  
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14 undergo induction of general anaesthesia remains relatively unaddressed.  
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17 Methods: APA members were surveyed regarding their use or avoidance of physical  
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19 restraint and alternate techniques to facilitate induction; factors affecting choice of  
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21 technique; and extent of preoperative discussion. The anonymous online survey used both  
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23 structured and free-text responses.  
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26 Results: Of 596 surveys, 310 were returned, a 52% response rate. Use of physical  
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28 restraint and extent of restraint employed declines with increasing child age. Distraction  
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30 techniques are frequently employed for children under 6 years old, with use of sedative  
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32 premedication increasing as child age increases. Urgency of procedure, developmental  
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34 delay, and preoperative discussion all have an affect. Comments demonstrated a wide  
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36 range of views and lack of consensus on what constitutes physical restraint, and what  
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38 degree of restraint, if any, is acceptable.  
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43 Conclusion: Our results are similar to US Society of Pediatric Anesthesia members,  
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45 suggesting this remains an issue internationally. Consideration of practices in other  
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47 specialties give some guidance. Our survey shows a range of views as to what physical  
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49 restraint is or involves, and what constitutes acceptable practice regarding use or  
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51 avoidance of physical restraint. We were unable to demonstrate consensus.  
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Technique	Age group (years)	Always	Most of the time	Rarely	Never
Sedative premedication initially	0-1	4( <b>1.3</b> )	10( <b>3.4</b> )	97( <b>32.7</b> )	168( <b>56.6</b> )
	1-3	9( <b>3.1</b> )	23( <b>7.9</b> )	138( <b>47.4</b> )	48( <b>16.5</b> )
	3-6	11( <b>3.6</b> )	23( <b>7.6</b> )	110( <b>36.3</b> )	25( <b>8.3</b> )
	>6	8( <b>2.7</b> )	15( <b>5.0</b> )	114( <b>37.9</b> )	22( <b>7.3</b> )
Sedative premedication following poor cooperation	0-1	11( <b>3.7</b> )	13( <b>4.4</b> )	91( <b>31.0</b> )	148( <b>50.3</b> )
	1-3	24( <b>8.0</b> )	38( <b>12.7</b> )	80( <b>26.8</b> )	43( <b>14.4</b> )
	3-6	31( <b>10.3</b> )	54( <b>18.0</b> )	61( <b>20.3</b> )	10( <b>3.3</b> )
	>6	39( <b>13.1</b> )	63( <b>21.1</b> )	54( <b>18.1</b> )	5( <b>1.7</b> )
Distraction (toy, story)	0-1	63( <b>21.4</b> )	62( <b>21.0</b> )	34( <b>11.5</b> )	33( <b>11.2</b> )
	1-3	103( <b>34.7</b> )	102( <b>34.3</b> )	8( <b>2.7</b> )	4( <b>1.3</b> )
	3-6	101( <b>34.1</b> )	113( <b>38.2</b> )	8( <b>2.7</b> )	4( <b>1.4</b> )
	>6	72( <b>24.4</b> )	100( <b>33.9</b> )	18( <b>6.1</b> )	6( <b>2.0</b> )
Partial physical restraint	0-1	30( <b>10.1</b> )	82( <b>27.7</b> )	13( <b>4.4</b> )	8( <b>2.7</b> )
	1-3	21( <b>7.0</b> )	66( <b>21.9</b> )	14( <b>4.7</b> )	3( <b>1.0</b> )
	3-6	11( <b>3.7</b> )	38( <b>12.7</b> )	46( <b>15.3</b> )	6( <b>2.0</b> )
	>6	10( <b>3.3</b> )	15( <b>5.0</b> )	109( <b>36.2</b> )	31( <b>10.3</b> )
Whole child restraint (parent)	0-1	25( <b>8.4</b> )	59( <b>19.9</b> )	31( <b>10.4</b> )	26( <b>8.8</b> )
	1-3	19( <b>6.3</b> )	74( <b>24.4</b> )	28( <b>9.2</b> )	11( <b>3.6</b> )
	3-6	5( <b>1.7</b> )	28( <b>9.3</b> )	60( <b>19.9</b> )	23( <b>7.6</b> )
	>6	4( <b>1.3</b> )	4( <b>1.3</b> )	139( <b>46.3</b> )	57( <b>19.0</b> )
Whole child restraint (staff)	0-1	1( <b>0.3</b> )	9( <b>3.1</b> )	109( <b>37.1</b> )	105( <b>35.7</b> )
	1-3	1( <b>0.3</b> )	4( <b>1.3</b> )	119( <b>39.7</b> )	107( <b>35.7</b> )
	3-6	1( <b>0.3</b> )	0	109( <b>36.4</b> )	129( <b>43.1</b> )
	>6	1( <b>0.3</b> )	0	101( <b>34.0</b> )	160( <b>53.9</b> )
Other	0-1	1( <b>0.6</b> )	2( <b>1.3</b> )	37( <b>23.6</b> )	102( <b>65.0</b> )
	1-3	1( <b>0.6</b> )	7( <b>4.5</b> )	39( <b>25.0</b> )	89( <b>57.1</b> )
	3-6	1( <b>0.6</b> )	8( <b>5.0</b> )	53( <b>33.3</b> )	77( <b>48.4</b> )
	>6	2( <b>1.2</b> )	7( <b>4.2</b> )	52( <b>31.5</b> )	81( <b>49.1</b> )

Table 1

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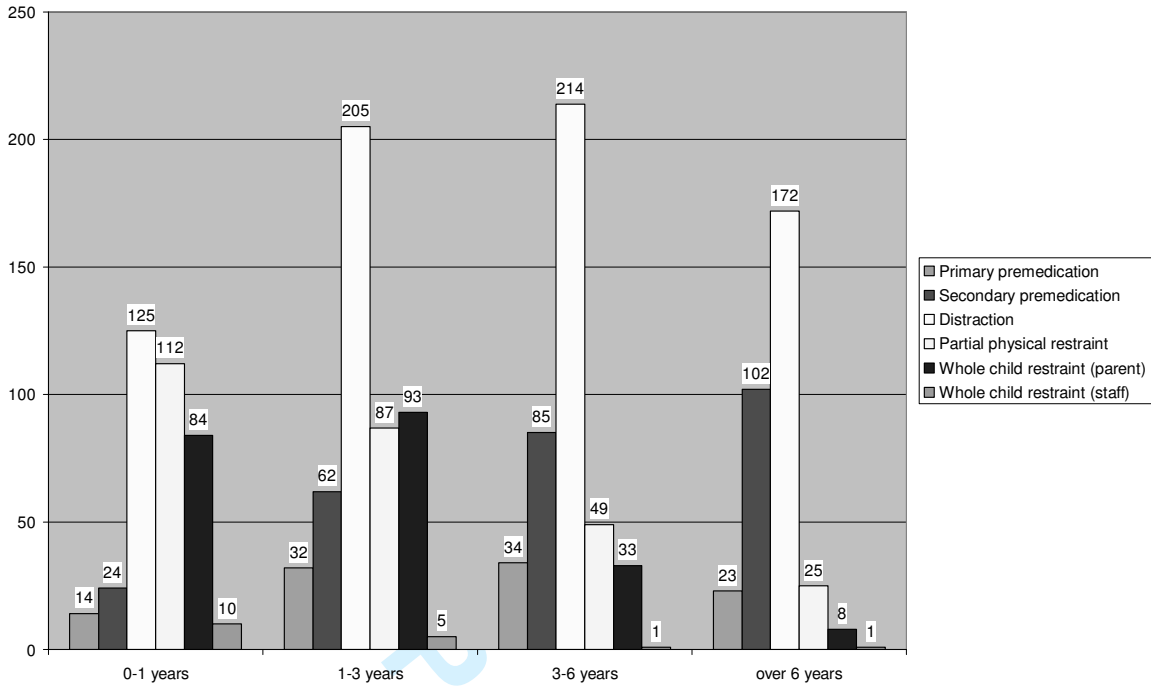


Figure 1

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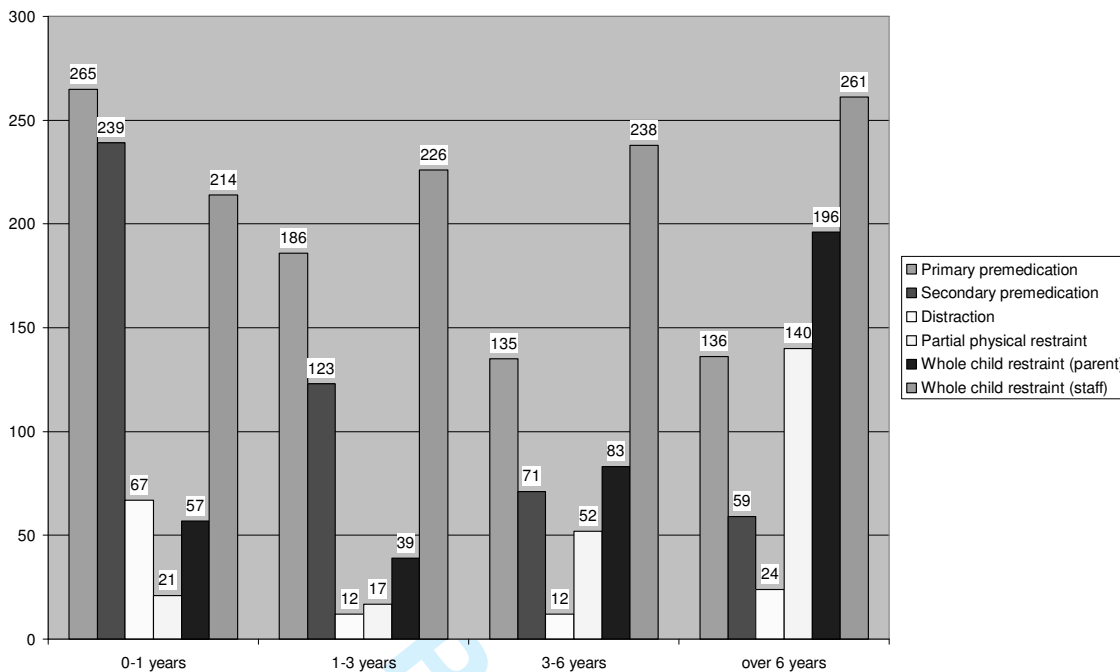


Figure 2

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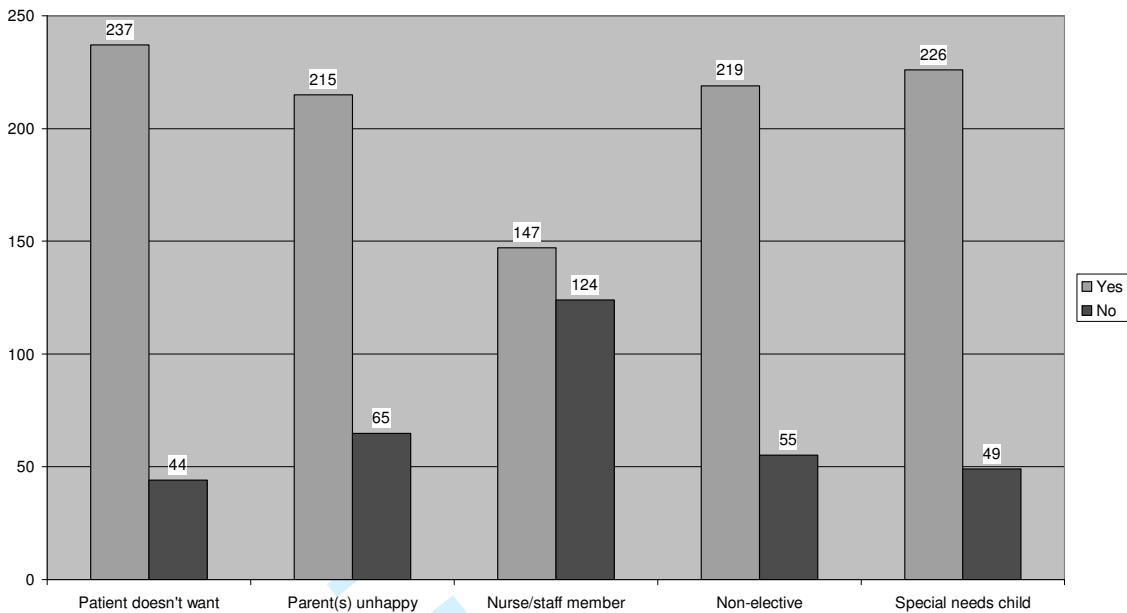


Figure 3

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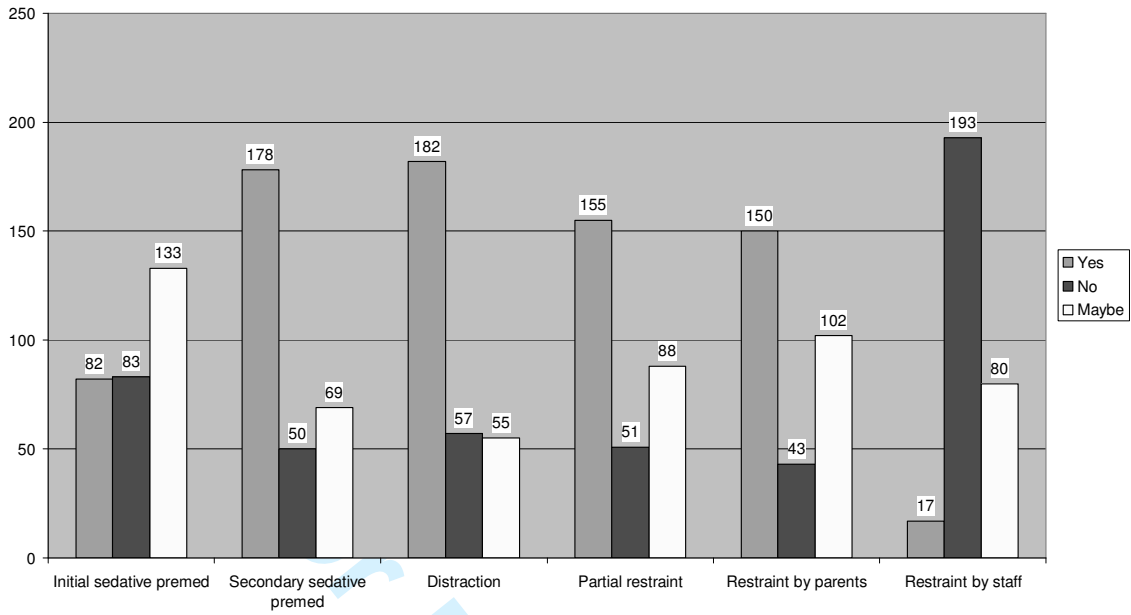


Figure 4

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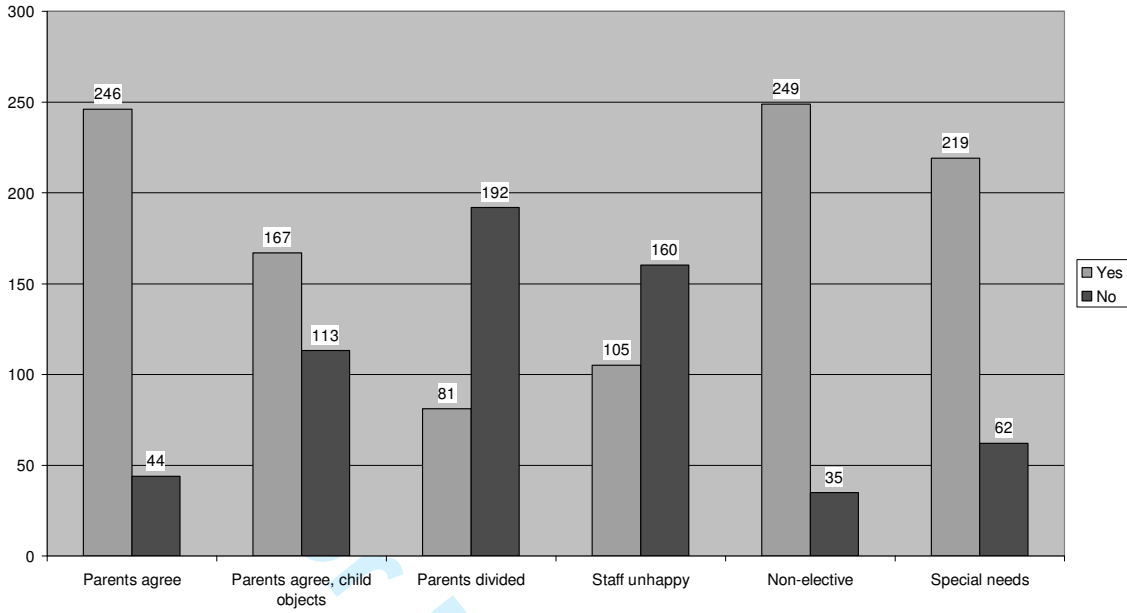


Figure 5

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3 Table 1: Frequency of using different techniques by age group (Appendix question 3).  
4 Responses for each technique and age group are presented as number of respondents  
5 (%). The survey software prevented a respondent giving more than one response in  
6 each technique/age group category, but not every respondent answered every  
7 category.  
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10 Figure 1: Numbers of respondents who said they always or mostly used the variety of  
11 techniques described in the survey (Appendix question 3) for the different age groups  
12 of children. Less than 6% (3 to 9 respondents) always or mostly used another  
13 technique than those listed, using free text to describe input by play therapists and  
14 psychologists, hypnotherapy, and intramuscular administration of ketamine.  
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17 Figure 2: Numbers of respondents who said they rarely or never used the variety of  
18 techniques described in the survey (Appendix question 3) for the different age groups  
19 of children. 81% to 89% rarely or never used a technique other than those described.  
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22 Figure 3 illustrates responses to questions 5 through 9 (Appendix), “Which of the  
23 following affect your decision to use [the techniques listed] with an individual child?”  
24 84% would change technique if the child objected, 77% if a parent objected, but only  
25 54% for a staff member’s objection. 80% would alter technique in an urgent or  
26 emergency situation, and 82% when faced with a special needs child.  
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29 Figure 4: Options for facilitating induction of anaesthesia which respondents routinely  
30 discuss with children and parents preoperatively (Appendix questions 10 to 15). 72%  
31 generally discuss initial premedication with 83% routinely or possibly mentioning the  
32 option of secondary premedication if cooperation proves to be poor. 81% discuss  
33 distraction techniques, and 83% discuss holding limbs or facemask firmly although  
34 only 38% always or mostly do this (Table 1). 85% discuss restraint by parents such as  
35 a secure cuddle (always or mostly used in 30% of toddlers). 67% do not routinely  
36 discuss staff restraining or holding down the child, compared with 74% to 88%  
37 (depending on the child’s age) rarely or never allowing this.  
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40 Figure 5: Answers to questions 17 to 23 (Appendix), “Does preoperative discussion  
41 render physical restraint techniques more acceptable in your opinion? (Regardless of  
42 whether you use any of these techniques yourself)”. 85% felt that physical restraint  
43 was rendered acceptable by parental agreement with its use, although only 60% felt  
44 this was still the case if the child objected, falling to 30% when parents were divided  
45 in their opinions, that is one agreeing but the other not. 40% considered physical  
46 restraint discussed preoperatively with parents to be acceptable even if staff members  
47 were unhappy with its use. 88% considered urgency of procedure plus discussion  
48 rendered physical restraint acceptable, with 78% feeling the same for special needs  
49 children.  
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