Guidelines For The Management Of Children Referred For Dental Extractions Under General Anaesthesia

APPENDICES

August 2011

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Guidelines for the management of children referred for dental extractions under general anaesthesia

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I. Literature search strategies

Electronic searches of the English literature were carried out using Medline (Ovid SP), Embase, CINAHL and PubMed databases from 1955 - 31st October 2010 inclusive. Manual searches of guidelines published by relevant professional regulatory bodies, associations and Royal Colleges were also carried out by members of the Guideline Development Group. For each Key Topic Area, at least two members of the committee searched the literature and assessed the evidence using SIGN Methodology. Evidence Tables were then prepared and Considered Judgment Forms were completed where possible, followed by the formulation of recommendations. Each stage of the process was discussed and agreed by the Guideline Development Group. A further search using Medline (Ovid SP) was conducted on 6th July 2011 and produced 12 recent references that were not considered by the Guideline Development Group. These are listed in Appendix VIII.
II. EVIDENCE TABLES AND CONSIDERED JUDGMENT FORMS

A. REFERRAL

Bibliographic citations ☑
Study types ☑
Numbers of patients ☑
Patient characteristics ☑
Intervention ☑
Comparison ☑
Length of follow up ✗
Outcome measures ☑
Effect size ✗
General comments:

EVIDENCE TABLE: REFERRAL

  - Analysis of 236 referral letters around key items such as patient identification, chief complaint previous management etc. Analysis showed that referral letters did not meet minimum requirements about clinical history or reason for consultation. Recommendations form this study is that standardised letters should be used

EVIDENCE LEVEL 3
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  - Compared the content of standard versus non standard letters from 1956 patient files. The quality and quantity of the information differed significantly between the two letters. The standard letters being more completed and containing information often missing in the non standard letters. Again advised the use of standard letters for referrals.
  - EVIDENCE LEVEL 2-

  - A retrospective analysis of all referral letters to a TMD clinic at Manchester Dental Hospital over a 10 week period. N = 100. Majority (94) graded as “little helpful”. No letters were “very helpful”. Conclusion referral letters contained insufficient information. Conclusions: introduction of referral proforma and guidelines will improve quality of referrals.
  - EVIDENCE LEVEL 3

- Quality improvement of referrals to a department of restorative dentistry following the use of a referral proforma by referring dental practitioners. Djemal. S et al BDJ vol 197 (2) Jul 2004 85-88
  - Compared patient data on a standard letter and then a proforma requested from referrer. No statistical analysis. 100 proformas compared. Concluded that the use of a proforma increased the quality and quantity of the information in referrals.
  - EVIDENCE LEVEL 2-

  - Assessed why patients were referred to paed unit of Liverpool Dental Hospital and the quality of the referrals. The reasons for their referral were compared to the clinical findings at assessment and the quality of the referrals were graded. N = 102. The commonest reason was for treatment under GA. The main reason stated in the referral was consistent with the findings at clinical assessment. However only 25% mentioned medical history and less than 30% included ant details treatment provided by referring practitioner. Concluded that the majority of patients were referred for good reasons but the quality of the referral letters were poor. Recommended structured referral proforma to improve quality of referrals
  - EVIDENCE LEVEL 3
**Guidelines for the management of children referred for dental extractions under general anaesthesia**

- **Do referrals from primary dental care for treatment using general anaesthesia comply with the general dental council guidelines?** Thomas D et al. Prim Dent Care Jan 11 (1) 26 – 30
  - Investigated the quality of the information in referrals for GA exodontias in children under age 16 years. 251 referrals approx half by letter and half by proforma. Significantly more proformas than letters contained a full medical history. A treatment plan was contained in significantly more proforma than letters. Few referrals contained written evidence of a discussion of the alternatives to GA and only 37% of parents reported that the referring GDP had discussed alternatives with them. A total of 551 primary teeth were referred for removal but 846 teeth were actually removed. Concluded a need for parents of patients referred to be better informed of alternatives. Also recommended a standard proforma to improve quality of referrals
  - **EVIDENCE LEVEL 3**

- **A retrospective study of dental general anaesthesia carried out in children living in North Wales 1995 – 1998.** Clewett JA, Treasure ET. Community Dental Health 2004 Sep 21 (3): 212 -6
  - To determine the reasons for referral for dental GA and the level of repeat dental GA. 31.8 % received further treatment under GA over the period and 50% of referrals did not include details of medical history
  - **EVIDENCE LEVEL 3**

- **A review of the use of general anaesthesia and conscious sedation in primary dental care.** Report by a group chaired by the CMO and CDO
  - Recommendation in report
  - “Dentists referring a patient for a general anaesthetic must be particularly aware of their responsibilities; these are set out in the GDC’s ethical guidance and include that clear justification for the use of a general anaesthetic be made in a referral letter. Referring Dentists have a responsibility to ascertain that the facilities at the premises to which they refer patients are adequate and that the clinical staff are properly trained.
  - **EVIDENCE LEVEL 4**
CONSIDERED JUDGMENT: REFERRAL

1. Volume of evidence

There is a small body of literature concerning referral pathways and use of structured referral processes. There are guidelines with a legal imperative for referring clinicians and evidence of inappropriate referrals.

2. Applicability

This is directly applicable to the NHS. The referral pathways currently vary widely across the UK resulting in unnecessary referral for GA on the one hand and underestimation of the extent of dental care needed with resultant repeat GA episodes.

3. Generalisability

A structured referral system should be generally applied.

4. Consistency

The evidence consistently supports the use of a structured referral system.

5. Clinical impact

A very large patient population (60,000-100,000 cases per year). Clear referral criteria are needed to match local services.

6. Other factors

GDC Standards

7. Evidence statements
8. Recommendations

- Services should develop local acceptance criteria for referral and distribute to all potential referrers. GRADE D
- Services should develop a local referral profoma containing all necessary referral information GRADE D
- Referring dentists must include on referral that they have discussed all the options and risks with the patient /parent and the justification for GA GPP
- Where possible, referral should be to a service for comprehensive medical and dental assessment prior to consideration of General Anaesthesia with options of LA, RA and sedation available as appropriate GPP
B. ASSESSMENT

Bibliographic citations ✓
Study types ✓
Numbers of patients ✓
Patient characteristics ✓
Intervention ✓
Comparison ✓
Length of follow up ×
Outcome measures ×
Effect size ×

General comments: Volume of evidence is small.

EVIDENCE TABLE: ASSESSMENT

Assessment of children prior to dental extractions under general anaesthesia in Scotland. Tochel C; Hosey M; Macpherson L; Pine C; Br Dent J 2004 May 22 196: 629 – 633

This study looked at the type of dental assessment service offered to children prior to exodontia under chair dental general anaesthesia in the community and hospital dental services in Scotland.

There was a telephone questionnaire to the services involved enquiring of the type if any pre-assessment clinic. The number of centres telephone N=21, but the number of patients passing through the centres is unknown

Changes to the treatment plan occurred at half the centres but details of exactly what changes are not included. The paper states that this is a pilot study and can be used as a basis for further study

Not sure re evidence level but will be weak

EVIDENCE LEVEL 3
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The role of pre-general anaesthetic assessment for patients referred by general dental practitioners to the community dental service. Landes DP, Clayton –Smith AJ Community Dental Health 1996 Sep 13(3) 169 -71

The purpose of this study was to investigate the effectiveness of seeing patients at a separate appointment prior to any subsequent appointment for dental GA. The second aim was to test the technical accuracy of the information contained in the referral.

Patients’ dental records were examined. N=593. Of these 105 required further investigation. 264 patients no change from referral letter; 208 had treatment plans altered; 49 had treatment with local; 41 cases discharged without any treatment. The authors conclude that the pre anaesthetic assessment prevented a need for a GA in 15% of referrals

EVIDENCE LEVEL 3


This study took place between 1994 and 1997 and involved 1581 patients. These were patients referred for oral surgery procedures from GDPs. Prior to the study referral criteria was given to GDPs. Patients could be referred by the GDP in one of three ways.

Group 1 multiple visit. GDP – Consultant _ waiting list – pre op check – DCU list

Group 2 double visit consultant – DCU list

Group 3 single visit direct access to DCU list

Of the 200 GDPs only 12 opted for the one visit referral most chose the two visit referral. These were enthusiastic GDPs who paid careful attention to the referral criteria

The reasons are speculated but not explored with the GDPs

Evidence base low

EVIDENCE LEVEL 3
CONSIDERED JUDGMENT: ASSESSMENT

1. Volume of evidence
A few papers only relevant to paediatric dentistry

2. Applicability
Highly applicable to paediatric dental GA population and fundamental to the optimal care pathway.

3. Generalisability
Generalisable to NHS

4. Consistency
Good

5. Clinical impact
High impact: accurate dental assessment informs accurate and comprehensive treatment planning. Accurate medical assessment is essential for safe anaesthetic management.

6. Other factors
A pre anaesthetic assessment visit allows modifications to the treatment plan and options for treatment other than by GA to be explored with the patient and parents. A one visit GA referral system requires detailed acceptance criteria and the enthusiasm of local referring GDPs.

7. Evidence statement

8. Recommendation
C. INTRAOPERATIVE CARE

Bibliographic citations ✓
Study types ✓
Number of patients ✓
Patient characteristics ✓
Intervention ✓
Comparison ×
Length of follow up ×
Outcome measures ×
Effect size ×

General comments: Most evidence in this section is from existing published standards and guidelines and so EVIDENCE LEVEL is 4 throughout.

EVIDENCE TABLE: INTRAOPERATIVE CARE

Staffing Standards - What should be the minimum standards for seniority/competence of anaesthetist & anaesthetic assistance?

The training and competencies expected of anaesthetists and their assistants undertaking paediatric general anaesthesia have previously been defined (1-5). More specific guidance in respect of outpatient paediatric dental general anaesthesia also exists (1,4).

Children undergoing outpatient paediatric dental general anaesthesia should receive the same standard of anaesthetic care as children admitted for day case or inpatient procedures. They should be anaesthetised by consultant anaesthetists who have appropriate experience in and a regular commitment to this practice, i.e. consultant anaesthetists who in addition to undertaking regular a nd relevant paediatric practice sufficient to maintain core competencies, possess dedicated training and skills in outpatient paediatric dental general anaesthesia, and undertake appropriate CPD (1,2,3,4,5). They should possess advanced training in life support for children and have maintained the skills so learnt. Such children may also be anaesthetised by Staff or Associate Specialist (SAS) anaesthetists provided they fulfil the same criteria, and there is a nominated supervising consultant anaesthetist available, with appropriate experience. When trainees administer outpatient paediatric general anaesthesia for dentistry they should be directly supervised by a consultant with appropriate experience.
The anaesthetist must be assisted by staff (operating department practitioners/assistants/anaesthetic nurses) possessing specific paediatric training and skills, including dedicated training and skills pertaining to outpatient paediatric dental general anaesthesia, and paediatric resuscitation training\(^{(1,2)}\).

5. The Anaesthesia Team. Revised Edition 2005. 2. AAGBI

Should staff be trained in paediatric life support?

Children undergoing anaesthesia must be managed by staff who have received appropriate training and whose competency in anaesthesia and resuscitation is adequate for the children they serve\(^{(2)}\). With respect to general anaesthesia for dentistry all personnel must be capable of basic life support, and the anaesthetic team must have expertise in advanced life support\(^{(1)}\). Regular updates in resuscitation techniques, and practice (as a team) of the management of simulated emergencies, are essential if skills are to be maintained and used effectively in a real crisis\(^{(1)}\).

Specifically, anaesthetists administering outpatient paediatric dental general anaesthesia should have advanced training in life support for children and maintained the skills so learnt\(^{(1,2,4,5)}\). In addition anaesthetic assistants whether operating department practitioners, assistants or anaesthetic nurses, as members of the anaesthetic team, should have experience in advanced life support for children.

In the period immediately following anaesthesia the child should be managed in the recovery ward or post-anaesthesia care unit on a one-to-one basis, by designated staff that undergo regular paediatric resuscitation training including both basic and advanced resuscitation techniques\(^{(2,3)}\).

1. Standards & Guidelines for General Anaesthesia for Dentistry. RCoA. February 1999
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3. The Anaesthesia Team. Revised edition 2005. 2. AAGBI.
5. Good Practice – A guide for departments of anaesthesia, critical care and pain management. RCoA/AAGBI 2006
6. Tomorrows Doctors - General Medical Council

Should staff be trained in safeguarding children?

Anaesthetists may encounter abused children in a number of situations and should be aware of legislation including the 1989 Children’s Act, rights of the child, child protection issues and the process of obtaining consent (1-5). The safety of the child is paramount and overrides all other duties.

Specific guidance for anaesthetists has been developed jointly by the Association of Paediatric Anaesthetists, the Royal College of Paediatrics and Child Health, and the Royal College of Anaesthetists (3). Anaesthetists should undertake child protection awareness training as part of their regular clinical governance programme so that they are aware of the local mechanisms in place, should they encounter what appear to be signs of child abuse (3).

What are the minimum standards for perioperative monitoring?

Nationally accepted guidelines, published by the AAGBI, already exist in respect of minimum standards of monitoring for anaesthesia (1). In accordance with these guidelines it is considered essential that clinical observation be supplemented by core standards of monitoring whenever a child is anaesthetised, in order to monitor the physiological state, depth of anaesthesia and the functioning of anaesthetic equipment. These minimum standards should be uniform irrespective of the duration, location or mode of anaesthesia, and this includes outpatient paediatric dental general anaesthesia. The minimum monitoring set consists of:-

1. Pulse oximeter
2. Non-invasive blood pressure monitor
3. Electrocardiograph
4. Airway gas monitoring: oxygen, carbon dioxide and vapour
5. Airway pressure

The following must also be available

- A nerve stimulator should a muscle relaxant is used
- A means of measuring the patient's temperature

It is acknowledged that during induction of anaesthesia in children it may not be possible to attach all monitoring before induction due to lack of, or fear of losing, cooperation. In such circumstances monitoring must be attached as soon as possible and the reasons for delay recorded in the patient's notes. If it is necessary to continue without a particular device, the anaesthetist must clearly record the reasons for this in the anaesthetic record. A detailed summary of the anaesthetic technique used and the information provided by the monitoring devices should be clearly recorded in the anaesthetic record.

A high standard of monitoring should be maintained until the child is fully recovered from anaesthesia with clinical observations being supplemented by the following monitoring devices.

1. Pulse oximeter
2. Non-invasive blood pressure monitor

The following must also be immediately available:

- Electrocardiograph
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- Nerve Stimulator (should a muscle relaxant have been used)
- Means of measuring temperature
- Capnograph


The uncooperative child & use of clinical holding/physical intervention

All anaesthetists should be aware of legislation including the 1989 Children’s Act, rights of the child, child protection issues and the process of obtaining consent (1-9).

The principles of good practice encompass an ethos of caring and respect for the child’s rights, where restraint, holding or containing without the child/young person’s consent are used as a last resort and are not the first line of intervention (7). Such physical interventions should only be used when there is a clear and pressing need, whilst acting in the child’s ‘best interests’, to undertake a procedure for the child. Alternative management strategies must be considered and, if clinically feasible and time allows, opportunity must be created to explore options further.

With respect to outpatient paediatric dental general anaesthesia this may be a child’s first experience of the hospital setting. In the past it has not been uncommon for preparation to be poor prior to outpatient dental anaesthesia, creating what may be avoidable anxiety for both child and parents. Effective preparation is important. Assessment at a prior appointment allows information to be given to the child and parents, hopefully preparing the child for what will be a satisfactory procedure. A sympathetic manner using encouragement, distraction, a sympathetic manner and, if problems are anticipated, sedative premedication, may improve the child’s experience. Inevitably, consequences will arise from imposing treatment on an uncooperative child by means of restraint or clinical holding and it is likely that cooperation with future dental or hospital care may be compromised. AAGBI consent guidelines in respect of the uncooperative child (5) inform us that “individual judgment must be exercised in determining the degree of restraint which is acceptable to achieve induction, even when the parents appear willing to have the child restrained. When faced with a child who is uncontrollable for whatever reason, the
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anaesthetist should consider ceasing treatment, giving an appropriate explanation to the parent or representative, and arranging future treatment for the child”. It is important to give due consideration to the legal implications of restraint and whether a planned procedure is really necessary, or urgent, and whether the child’s interests, immediate and long-term, would be better served by deferring the procedure, allowing exploration of alternative strategies.

If there is an urgent clinical requirement to expedite treatment in an uncooperative child or all other strategies have been exhausted, and there is a pressing clinical need to proceed with a procedure, then physical intervention, as a last resort, might be considered. It should never be used for the convenience of the professional or the child’s family. When after careful evaluation the need for physical intervention is thought likely its use might be viewed as a component of the required treatment and is therefore subject to the same consent process as any other clinical intervention. The parent or guardian must be informed about the likely use of physical intervention, how it might be applied, the risks and benefits and the possible consequences of not proceeding with treatment. If they are unhappy to proceed then their wishes should be respected and carefully documented. It is appropriate to involve other members of the team in decision-making process, especially if they disagree with the decision that is made.

Due consideration must be given to regular and updated training for designated staff (7,9).

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CONSIDERED JUDGMENT: INTRAOPERATIVE CARE

1. Volume of evidence


2. Applicability

Wide applicability in the NHS throughout the UK

3. Generalisability

These standards and guidelines are widely accepted in the professions and should be applied to this target population.

4. Consistency

The guidelines are broadly consistent and the principles are widely accepted.

5. Clinical impact

This is a very large patient population probably around 60,000-100,000 cases per year. Practice surveys suggest variation in implementing existing standards. Significant morbidity still occurs in this patient population. There may be resource implications in ensuring compliance with the current standards and guidelines.

6. Other factors

Most of these standards and guidelines are based upon expert opinion. Some standards and guidelines have legal underpinning and implications for non-adherence. The Evidence Statements concentrate rather on anaesthetists and need to consider all members of the team: many of the principles apply to dentists, ODPs, nurses and the final text should reflect this. The role of Sedative
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premedication may need to be considered. There may also be a case for considering specific anaesthetic techniques and procedures/equipment as these may impact on post-operative morbidity.

7. Evidence statements

8. Draft recommendations

Children undergoing outpatient paediatric dental general anaesthesia should receive the same standard of anaesthetic care as children admitted for day case or inpatient procedures. GRADE D

Children undergoing anaesthesia must be managed by staff who have received appropriate training, and whose competency in anaesthesia and resuscitation is adequate for the children they serve. GRADE D

Nationally accepted standards of monitoring for anaesthesia emphasise that clinical observation should be supplemented by core standards of monitoring whenever a child is anaesthetised, in order to monitor the physiological state, depth of anaesthesia and the functioning of anaesthetic equipment. These minimum standards should be uniform irrespective of the duration, location or mode of anaesthesia, and this includes outpatient paediatric dental general anaesthesia. GRADE D

It is recommended good practice to establish intravenous access, if not prior to induction of general anaesthesia, then immediately afterwards, even for the briefest of dental procedures. GPP

All staff caring for children must be trained in safeguarding and this must be annually updated. GPP

All staff must be trained in the correct procedures for managing the uncooperative child. GPP
REFERENCES

D. PERIOPERATIVE ANALGESIA

Bibliographic citations ☑
Study types ☑
Numbers of patients ☑
Patient characteristics ☑
Interventions ☑
Comparisons ☑
Length of follow up ☑
Outcome measures ☑
Effect size ☑

General comments:
Worth referencing APA Pain Guidelines sections on basic principles of analgesia p86-87 and Dental analgesia p100-101.
Can also add extrapolation of evidence from adult literature on use of NSAIDS, paracetamol, IV paracetamol etc especially as guideline goes up to age 18y.

EVIDENCE TABLE: PERIOPERATIVE ANALGESIA

LOCAL ANAESTHESIA NO BENEFIT

Sammons et al. Randomized controlled trial of the intraligamental use of a local anaesthetic (lignocaine 2%) vs controls in paediatric tooth extraction. Int J of Paed Dentistry 2007; 17: 297-303

RCT Single blind, block randomisation

Children 2-5 yrs old, 86 recruited (32 refused or excluded) numbers not recruited to power calculations. Lig vs no injection, intraligament no numbness, gum injury.

All received Preop Para 20/kg and Ibuprofen 10/kg

Pain using ‘toddler preschool postop pain scale’ validated children 1-5. parent diary at home and wong baker face scale, tel follow up 24hrs & 7 days. Endpoint pain in 1st hr
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Stat significant reduced pain scores 5 mins not at subsequent times in 1 st hr, or at home pain scores same, equal analgesia requirements.

EVIDENCE LEVEL: 1-


RCT single blind. 85 children computer randomised LA infiltration & haemostatic packs vs haem packs only. Grps matching

Use CHEOPS: validated pain score

No difference in CHEOPS pain scores. More suctioning for bleeding, no reoperations ? significance. Median pain scores 6 on CHEOPS suggest well controlled pain with preop analgesia alone. Interobserver reliability with CHEOPS not assessed. CHEOPS scores pain vs distress?? significance blood loss with suction or pack change only?

EVIDENCE LEVEL: 1+


DB RCT, 142 children, ages 4-12 yrs,

2% lig with adrenaline 1:200000 vs saline intraoral injection.

Pain scores preop then on awakening, 30mins, 24 hrs along with distress scores awakening and 30 mins.

All received paracetamol 15/kg preop.

Use of unvalidated faces pain scale on awakening, no difference pain scores or in number requiring paracetamol at home.

Lip & cheek biting in 3 vs 1 control. Severe pain 13% (12% control), very severe pain 13% (10% control).

EVIDENCE LEVEL: 1+
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DB RCT computer generated envelopes

135 children, ages 2-12 yrs, mean no extractions = 7 (1-10 extractions)

Randomized to bupivicaine (bup 0.25% with adren 1:4000) soaked swab at end of procedure vs sterile water soaked

Use of 5 point ‘distress scale’ like wong baker faces scale.

All children received preop paracetamol 15/kg

Pain scores postop and at 15 mins, no difference distress scores in either group

In both groups 2-6 yr olds recorded higher distress scores than older children

EVIDENCE LEVEL: 1+

[refs Al-Bahlani Jour of RCSED 2001; 46: 261-264; less bleeding more distress]


DB RCT, observer blind, random numbers, sealed envelope

Soaked swabs over extracted tooth sockets, bup 0.25% +adr 1:200000 vs saline, 10 ml solution. In place till wake up mean 8 mins All received Diclofenac 1/kg PR

133 children ages 5-12 yrs, extractions > 5.

4 point pain scale including non validated cartoon faces; scored at 15 & 30 mins into recovery, nurse observer scores & patient.

No difference in pain scores in either group

EVIDENCE LEVEL: 1+
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DB RCT comparing injection techniques of local anaesthesia. NO previous study for power analysis.
Children ages 2-6 yr s. 87 rand omised children, data analysis from 54 as standar d of diclofenac and parac etamol supps required. 18 received NO LA, 17 received Infiltration LA, 19 received Intraligamentous LA
Modified pain/discomfort score for recovery 0, 15, 30 mins
Simplified toddler-preschooler postop pain score for use by parents on 3 consecutive nights.
Results no difference between pain and anxiety scores any of groups in recovery phase.
Children with intralig injection had lower pain scores on first night compared with infiltration but not with no LA grp.
No power calculation, small numbers, wrong conclusion.
EVIDENCE LEVEL: 1-

RCT?
30 children having permanent molar extractions, randomised to one side intraligament LA (ILA) vs contralateral side no LA, ages mean 11.3yrs.
Venham Picture test preop & postop anxiety and blinded observer
VAS rate which side better for pain control, if felt numbness and if preferred numbness
VAS not significantly different between sid es, 63% said pain better numb side more boys th an girls, VPT sc ores significantly higher for girls
No control injection
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LOCAL ANAESTHESIA WITH BENEFIT


Abstract only

DBRCT (envelope)

N = 24 (48 recruited but 18 no pain, 6 withdrawn d/t poor cooperation) ages 7-15, pain after extraction 24 ex 42 on awakening.

Randomised to adrenaline containing Bupiv 0.25% vs saline.

Assessed presence of pain or not? Assessed 5 and 10 mins only after application

Reduction of pain in 10 ex 12 bupiv group vs placebo.

EVIDENCE LEVEL: 1-


Cohort study morbidity after day case GA dental treatment. Mixed procedures including restorations, extractions, surgical extractions.

N=121, ages 6-16

All received PR diclofenac, PR codeine, or PR paracetamol + alfentanil

Recorded pain and anxiety pre and postop before discharge, 12, 36, 72, 148 hrs

Pain via visual analogue and verbal rating scales

Multi level multivariate analysis techniques

50% had no pain in recovery, and LA reduced pain (OR 0.39) but increasing numbers (OR 1.95) of extractions increased pain levels.

Pain persisted, postop at 36 hrs 28% had moderate pain, 9% had severe pain

EVIDENCE LEVEL: 2+
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Observational study 72 children ? age range but mean age 7yrs

Review postop in recovery and at 24hr phone call.

50 had LA, 22 had systemic analgesia (17 fentanyl + paracetamol oral, 5 paracetamol oral only) Pain assessment 0-4 verbal rating score. No difference in pain scores

Behaviour scores; calm vs unsettled, LA group significantly more calm children.

Numbers small, non validated assessment tools.

**EVIDENCE LEVEL: 2-**

**SYSTEMIC ANALGESIA**

**Littlejohn et al.** Postoperative pain relief in children following extraction of carious deciduous teeth under general anaesthesia; a comparison of nalbuphine and diclofenac. Eur J of Anaesthesiology 1996; 13: 359-363

DBRCT, 60 children, mean age 6, youngest 2, day case extractions

3 groups IV nalbuphine 0.3/kg, PR Diclofenac 1-2/kg, nothing

Use OPS 0-10 at 5, 10, 15, 30, 45 mins after awakening

no significant difference pain scores or rescue needs or PONV in 45 min monitoring period

majority scores 0, short monitoring period

**EVIDENCE LEVELS: 1-**
Guidelines for the management of children referred for dental extractions under general anaesthesia


DB RCT

60 children 4-7 yrs, 6 or more dental extractions.

Oral Tramadol 1.5/kg + midaz 0.5/kg vs midaz only + saline placebo

Pain and rec scores on awakening and at 15 min intervals to 1hr then at 2 hrs

Pain scores oucher faces score and Hannalah OPS by mother and nurse at 15, 30, 60, 90 120 mins

Tramadol grp had significantly less pain than control grp at all time points. 10 min longer recovery but not stat significant

And significantly fewer postop paracetamol doses (19 vs 82%)

Pain scores same in both grps by HOPS when additional postop paracetamol given.

EVIDENCE LEVELS: 1-


Non RCT, different hospitals, non standardized

N = 210, day case extractions, ages 3-12, short Gas < 10 mins

Variable dose voltarol 25 mg for all > 12kg, paracetamol 20mg/kg preop

Pain recorded at 15 mins in recovery only.

WBPS used so self report (? Accuracy 3yr olds)

Drawbacks: not randomized, variable age grps not uniform, ? ethics of no analgesia
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Voltarol more effective than paracetamol, more effective than not hing, for both no pain vs all degrees of pain and no-moderate pain vs moderate to high pain.

EVIDENCE LEVELS: 2-


RCT DB

N= 212 (194), ages 2-12 yrs, extract 1-14 teeth, randomized double blind.

Doses: par 15/kg, par 20/kg, ibu 5/kg, para 15+ ibu 5/kg combined

Assessed preop, on awakening and 15 mins post awakening

Assessed Obj distress score 5 point smiling faces and CHEOPS, all scored by single observer.

Postop no significant diff pain scores between grps, at 15 mins ibuprofen alone and combined = significant pain score reduction compared with control. Distress scores also reduced at 15 mins

Higher pain and distress scores in younger children and multiple extraction children.

EVIDENCE LEVELS: 1-

Purday et al. Comparative effects of intravenous ketorolac or morphine on emesis and analgesia for restorative dental surgery in children. Can J of Anaesthesia 1996; 43: 221-225

DB RCT, 120 children, 4 groups ketorolac 0.75/kg, 1/kg, 1.5/kg, morphine 0.1/kg

OPS 0-10 scale at 15, 30 mins after wakening by blinded observer + home phone call and recording rescue paracetamol doses.

No difference in any parameters including pain scores and post op analgesia needs, but more PONV in the morphine group and no bleeding problems in ketorolac grps.

? adequate power to detect diff scores low in each grp with wide range
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EVIDENCE LEVELS: 1-

Alhashemi et al. Effect of intravenous acetaminophen vs intramuscular meperidine on pain and discharge time after paediatric dental restoration. European J of Anesthesiology 2007; 24: 128-33

DBRCT, abstract only viewed

40 children day care dental restoration. All premed midazolam 0.5/kg and intraop fentanyl 1mcg/kg. GrpA Acetminophen 15mg/kg, grpM meperidine 1.5mg/kg before surgery start)

Monitored OPS, Ramsay sedation score and Aldrete recovery score

Grp A slightly higher pain scores, Grp M higher sedation scores and slower recovery

EVIDENCE LEVEL 2-
CONSIDERED JUDGMENT: PERIOPERATIVE ANALGESIA

1. Volume of evidence

There is a paucity of good evidence for paediatric outpatient dental analgesia. High quality randomised controlled trials are limited but extrapolations could be reasonably made from some adult studies particularly for use of systemic analgesia in young people.

Standardised and validated pain assessment tools are rarely used. Short-term pain assessment is often applied with few studies evaluating pain at home.

2. Applicability

The evidence on perioperative analgesia is directly and immediately applicable to the NHS.

3. Generalisability

The available evidence on perioperative analgesia in children is extensive and summarised recently in the APA Pain Guidelines 2008 (APAGBI, 2008). There should be consistent standards for the provision of perioperative analgesia in children and young people. The dental GA population should receive good analgesia based on widely accepted principles of pre-emptive, multimodal analgesia and modern understanding of analgesic pharmacology.

4. Consistency

A number of studies provide evidence that local anaesthesia is not of benefit though many of these studies include patients receiving paracetamol or non steroidal anti-inflammatory drugs (NSAIDs) or combinations of these drugs. There is some evidence that there may be harmful consequences of gum biting associated with use of local anaesthesia. A handful of studies suggest that local anaesthesia may be of minimal benefit for providing pain relief (Atan et al., 2004, Jurgens et al., 2003). Local anaesthetic and vasoconstrictor combinations may be chosen because of the reduced bleeding associated with vasoconstrictor use (McWilliams and Rutherford, 2007). There may also be some benefit in the use of local anaesthesia for the older child where the sensation of numbness that will be experienced can be explained.
Guidelines for the management of children referred for dental extractions under general anaesthesia

5. Clinical impact

Modern analgesic management starts before surgery and continues for as long as required afterwards. It should be individualised for each child depending on age, co-morbidity and type of surgical procedure. Current analgesic management for dental procedures is inconsistent and this guideline should provide practical advice on the need for effective analgesia and how it should best be delivered.

6. Other factors

Add some practical advice about analgesic regimens: drugs, doses, timings, formulations. Include IV routes, analgesic pre-meds, continuing analgesia at home. Analgesia can be administered: Preoperatively in oral form: commonly paracetamol and / or ibuprofen elixir. Intraoperative rectally: diclofenac or paracetamol, though there is slow onset, variable absorption and high dosage requirement for paracetamol. Intraoperative intravenous: paracetamol or diclofenac (Dyloject). Postoperatively in oral form: paracetamol and / or ibuprofen elixir. Choice, route and timing will depend on situation including preoperative admission times, duration of surgery and number of extractions, and postoperative discharge policy and timing.

7. Evidence statements

1. Dental outpatient procedures are associated with pain which can persist for up to 72hrs and which requires treatment. Younger children and those having multiple extractions are more likely to experience pain and upset. (Needleman et al., 2008, Atan et al., 2004, Anand et al., 2005, Gazal and Mackie, 2007)

   EVIDENCE LEVELS: 3, 2+, 2+, 1+

2. Generic aspects of pain management apply to paediatric outpatient dental procedures. These include the need for age appropriate pain scoring, consideration of a range of analgesia techniques including local and systemic analgesia drugs, and information and instructions for parents about postoperative pain management. (APAGBI., 2008)

   EVIDENCE LEVEL 1+

3. The use of local anaesthesia to provide analgesia after dental extractions under general anaesthesia is of no benefit or minimal benefit.
Guidelines for the management of children referred for dental extractions under general anaesthesia


EVIDENCE LEVELS: 1+/-; 1-; 1+; 1+; 1+; 1-; 3

4. **NSAIDS** can provide analgesia for pain after dental extractions. Diclofenac or ibuprofen have been shown to be effective compared with or combined with paracetamol (O’Donnell et al., 2007, Gazal and Mackie, 2007).

EVIDENCE LEVELS: 2-; 1+

5. **Opioids** are not required for routine use in dental outpatient extractions. Opioids demonstrate no analgesia benefit over NSAIDS and may prolong recovery and increase sedation (Purday et al., 1996, Littlejohn et al., 1996). Oral preoperative tramadol improves pain scores and reduces paracetamol analgesia requirements, at the expense of increased sedation (Roelofse and Payne, 1999).

EVIDENCE LEVELS: 1-; 1-; 1-

6. **Postoperative analgesia advice** should include regular use of oral paracetamol and/or NSAIDs (APAGBI, 2008)

EVIDENCE LEVEL 1+
REFERENCES


Guidelines for the management of children referred for dental extractions under general anaesthesia


8. DRAFT RECOMMENDATIONS

1. Pain after dental procedures should be anticipated and managed with adequate doses of simple analgesics (paracetamol, NSAIDs) given alone or in combination before surgery and continued during and afterwards for up to 72 hours. Young children and those having multiple procedures tend to have more pain.

GRADE OF RECOMMENDATION: tbc

2. Local anaesthesia +/- vasoconstrictor applied topically or by infiltration offers minimal benefit in terms of analgesia especially in younger children and is associated with distress and complications due to numbness.

GRADE OF RECOMMENDATION: tbc

3. Local anaesthesia +/- vasoconstrictor may be useful in older children where expected numbness can be explained. Haemostatic effects are useful in certain cases.

GRADE OF RECOMMENDATION: tbc

4. Opioids demonstrate no analgesia benefit over NSAIDS and may prolong recovery and increase sedation.

GRADE OF RECOMMENDATION: tbc
E. RECOVERY

Bibliographic citation ☑
Study type ☑
Number of patients ✗
Patient characteristics ✗
Intervention ☑
Comparison ✗
Length of follow up ✗
Outcome measures ✗
Effect size ✗

General comments: Published guidelines from AAGBI are the main resource. Need evidence statements on recovery facilities, equipment and staffing.

EVIDENCE TABLE: RECOVERY

Recovery from anaesthesia can be divided into three phases: First stage recovery - which lasts until the patient is awake, protective reflexes have returned, pain is controlled and they can be discharged from the recovery area. Second stage recovery - which ends when the patient is ready for discharge from hospital. Late recovery - this phase may last several weeks, and ends when the patient has made a full physiological and psychological recovery from the procedure undertaken. The anaesthetic techniques chosen should be designed to maximise the speed and quality of recovery in the first and second stages, and so facilitate discharge. Technique may have less influence on the late recovery, which is affected by many additional factors, so this phase will not be dealt with here.

First stage recovery

First stage recovery should be undertaken in a recovery area with appropriate facilities and staffing [10]. The patient remains in this area until awake, in control of his/her airway, orientated, comfortable, without continuing haemorrhage or other complications. Each unit should have clear criteria for discharge from this area and some units may consider using a scoring system. Aldrete [11] has suggested a system based on clinical parameters. The use of modern drugs and techniques may allow early recovery to be complete by the time the patient
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leaves the operating theatre, allowing a significant number of patients (up to 42% in some studies) to bypass the first stage recovery area [12]. Adopting this “fasttracking” system may theoretically allow cost savings by reducing the staffing levels in the recovery area, but may increase drug costs. In addition, for most operating lists, there will need to be some staff in the recovery area so savings are very difficult to quantify. Whether this concept is appropriate will depend on local factors such as case mix, and protocols should be established to identify when a patient may be ‘fast tracked’. It is useful to consider that almost all patients who undergo surgery with analgesia provided by a local anaesthetic block will be able to be ‘fast-tracked’.

Second Stage Recovery

This stage of recovery will normally be undertaken in a ward area adjacent to the day surgery theatre. The ward should be equipped and staffed to deal with the common postoperative problems such as PONV and inadequate analgesia, as well as less common postoperative emergencies such as haemorrhage or cardiovascular events. The anaesthetist and surgeon responsible for the operating list should be contactable and they or a deputy should be available to help deal with problems that arise. Protocols should exist for the management of patients who require unscheduled admission, especially in a stand-alone unit. Every patient should be seen following surgery by the anaesthetist and surgeon involved in his/her care. The nursing staff may be delegated the responsibility for discharging the patient by using discharge criteria agreed with the Department of Anaesthesia. If there is any doubt about the patient’s fitness for discharge, the anaesthetist concerned or a deputy must be contacted. Attempts have been made to identify simple bedside psychomotor tests or scoring systems to guide discharge status, but none has proven sufficiently useful for routine clinical practice.

An example of a discharge criteria form is in Appendix 6. Work has been done reviewing the evidence for some of the traditional discharge criteria, in children and adults [13]. It has been shown that both voiding and/or requiring patients to drink fluids before leaving the unit are not always necessary, and may delay time to discharge. It is important to identify and retain patients who are at particular risk of developing later problems, such as those who have experienced prolonged instrumentation or manipulation of the bladder, but protocols could be adapted to allow low risk patients to be discharged without fulfilling the traditional criteria.

EVIDENCE LEVEL 4
CONSIDERED JUDGMENT: RECOVERY

1. **Volume of evidence**

Guidelines available from AAGBI, covers paeds.

2. **Applicability**

   high

3. **Generalisability**

   Good

4. **Consistency**

   n/a

5. **Clinical impact**

6. **Other factors**

7. **Evidence statements**

8. **Recommendations**
Guidelines for the management of children referred for dental extractions under general anaesthesia

F. DISCHARGE

EVIDENCE TABLE: DISCHARGE

Planning for discharge in advance

“To achieve a high-quality service discharge planning in day surgery should begin before the adult or child is admitted to the unit. Pre-operative assessment has become essential to the development of day surgery planning. For children and adults alike it provides an opportunity to discuss the patient’s needs and to address any fears or anxieties of the patient, family or carer. Discharge planning must embrace physical, psychological and social aspects of individual patient care. This framework can then be used to develop guidelines for patient discharge following day surgery”. (BADS)

‘Whenever and wherever a child (0-16 years) is admitted as a day case, we suggest the concept of a planned package of care is adopted. We recommend that such a package should contain the following standards, which might be used as quality standards in NHS contracts. The admission is planned in an integrated way to include pre-admission and post-admission care, and to incorporate the concept of planned transfer to primary/community services. The child and parent are offered preparation before and during the admission.’ (RCN 2007)

‘The management and care of day cases should comply with standards contained in the report ‘Just for the Day’, irrespective of whether children are managed in a specialist paediatric unit or an adult unit adapted for children’ (Just for the Day)

EVIDENCE LEVEL 4

Preparation of specific discharge information should be collected in readiness for each patient so discharge is as smooth and unrushed as possible.

What should be the criteria for discharge home?

“The anaesthetist should see all children during the recovery period, either in the central recovery area or day unit and should have agreed the criteria and delegation for discharge from the day unit to home.

(i.) Protocols need to be established so that ward staff are aware of whether they expect the anaesthetist to come to the ward at the end of the list
Guidelines for the management of children referred for dental extractions under general anaesthesia

(ii) If the nurses or senior house officer have the delegated authority to discharge, protocol should be agreed. The following are suggestions from the evidence:

- Observations are stable and at a satisfactory level
- The child is up and playing without signs of dizziness
- The child is tolerating fluids
- The condition of the wound is satisfactory (where applicable)
- The child has passed urine (where applicable)
- The parents are happy about the child’s post-operative condition


Discharge Criteria

Every patient should be seen following their operation by the anaesthetist and surgeon involved in their care. Assessment of when the patient is ‘street fit’ or ready for discharge should be performed by nursing staff. Each unit needs to identify clear discharge criteria as part of a written policy for staff to follow. These need to consider social factors as well as a medical assessment of sufficient recovery for discharge.

Scoring systems exist to aid in the assessment of recovery and are extensively used in Canada and the USA. Suitable systems include the Post Anaesthesia Recovery Score modified for Day Surgery which was published by Aldrete in 1995. In this system patients can score a maximum of 20 and those with a score of 18 or greater are said to be fit for discharge.

Another more recent system is the Postanesthesia Discharge Scoring System (PADSS) developed by Marshall and Chung. The total possible score is 10 and patients scoring 9 or above are fit for discharge.

Whether scoring systems have advantages over the simple tick list of the criteria outlined previously is for each individual unit to decide. However if a scoring system is to be used it is important that the scoring system is reproduced in full in the patients care plan and that those criteria not addressed by this system are included at some stage in the assessment. Scoring systems are useful to judge reproducible endpoints for use in research projects, however no current system covers all the social, psychological and physical...
assessments necessary to ensure that the patient is indeed ready for discharge. Perhaps a system that encourages nursing staff to look at both the patient and their carer and not just a score sheet, will ultimately provide the best results.

Discharge Process & information needs

Regardless of how patient discharge is organised within individual units, the actual discharge process should create a climate in which patients and their carers understand their roles and responsibilities in ongoing care and therefore feel confident to go home. In general, avoiding discharging patients too early will usually ensure that any essential discharge criteria are met. Preparation of specific discharge information should be collected in readiness for each patient so discharge is as smooth and unrushed as possible. The communication skills of nurses in coordinating this process are therefore of utmost importance. With the possible exception of a diagnosis, none of the information provided during the discharge process should be new. The practice of patients being given diagnostic information when still under the effects of anaesthesia should be avoided whenever possible. Uncertainty and anxiety about a diagnosis as a result of post anaesthetic drowsiness will also interfere with the processing of other necessary discharge information. When this is unavoidable, nursing staff must ensure that information given is reinforced prior to discharge. Whenever possible, the patient's identified carer should be involved in all predischarge assessment and information giving. Nursing staff must ensure that they assess both patient and carers understanding of their ongoing care responsibilities through structured questioning. As a general guide, procedure specific information should encompass specific instructions regarding prescribed analgesics, antiemetics or antibiotics; wound care, when patient is able to bathe or shower; arrangements for dressing renewal and suture removal (if appropriate); resuming normal activities; what 'normal' symptoms may be expected and their duration; what would be abnormal symptoms and what to do if they occur; contact telephone numbers for information or in an emergency; arrangements for follow-up (telephone and out-patients). (British Association of Day Surgery Handbook Series Guidelines about the discharge process and the assessment of fitness for discharge)

Discharge criteria should be relevant to the aims and objectives of each individual unit. However, the following aspects must always be assessed when developing discharge criteria for both adult and paediatric patients, irrespective of who takes responsibility for this purpose.

Physical criteria

d. conscious level should be consistent with pre-operative state

d. cardiovascular and respiratory assessments should be stable
Guidelines for the management of children referred for dental extractions under general anaesthesia

✦ alimentary – input and output assessment should be undertaken
✦ patients should be conscious and orientated
✦ pain, nausea and vomiting should be minimal and controlled
✦ wound site – surgical bleeding should be minimal, i.e. not requiring a dressing change
✦ mobility of the patient – patient should be able to walk at a pre-operative level.

Psychological criteria
✦ information about the patient’s recovery at home in relation to their procedure, both verbal and written – the patient’s and the parent’s/carer’s level of understanding should be checked
✦ follow-up appointments – instructions should be given to the patient or their parent/carer
✦ check medication to take home has been provided – parents/carers may need support and guidance on administration
✦ contact telephone numbers should be given to the patient or their parent/carer both for emergency and continuing care
✦ general practitioner letter should be given to the patient or their parent/carer, or it should be posted depending on unit policy
✦ support in the community is advised following day surgery as parents/carers can feel very anxious in the immediate post-operative period
✦ some areas are able to offer a next-day visit from a children’s community nurse. Others may offer a telephone call either from the community team or the day unit
✦ dressing/surgical appliances should be provided as needed and guidance given on their use
✦ verbal and written information for the patient/child and parent/carer should be given and level of understanding checked
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Social criteria

✦ suitable transport home should be arranged, not public transport

✦ home environment should be suitable for the patient following the procedure/surgery undertaken – for example access to a telephone or lift if in a flat. If the patient is a child, check sleeping arrangements – for example will they be sharing with a sibling?

✦ parent/carer arrangements should be made for taking time off work or arranging care of other children

✦ suitable general practitioner, community or children’s community nurse, health visitor or school nurse arrangements should be made

All patient care should be clearly and fully documented prior to the patient’s discharge. Documentation is an important issue within day surgery, particularly when the patient’s experience is condensed into a few hours. Each unit should develop their own forms of documentation, including documentation for the care of children. This will provide an audit trail while also contributing to the trust’s obligation to clinical governance. The clinical governance agenda requires units to develop standards, protocols and audit tools in order to monitor the quality of care (Royal College of Nursing Sheet 4 Day Surgery Information Discharge planning).

Responsibility for the discharge process is shared between the dentist, the anaesthetist and the recovery nursing staff. In addition to following any local policies for discharge, more general guidelines for discharge after GA include:

- Patients and parents should receive verbal and written post-operative instructions; advice should be given of any symptoms that might be experienced in the first 24 hours following discharge;
- Analgesics including paracetamol BNF should be recommended for use in the 24 to 48 hours following discharge;
- Specific instructions regarding mouth care after surgery should be given; the nature of any sutures placed should be described and an appointment made for post-operative assessment. It is wise to arrange such a follow up to ensure that healing is progressing normally and that any absorbable (dissolving) sutures have been lost spontaneously.

Vital signs and conscious level must be normal compared with the child’s preoperative state

- There should be no respiratory distress or stridor, particularly in children who have been intubated.
- Swallowing, cough and gag reflexes should have been regained.
- The child’s movements should be normal for their age (see note 2 below).
- The child should ideally have no pain. Mild pain must be controllable by simple analgesics.
- The child should be free from nausea and/or vomiting.
- The child must be accompanied home by a responsible adult and adult supervision must be available at home.
- The child should be taken home in private transport.

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Guidelines for the management of children referred for dental extractions under general anaesthesia

(Royal College of Surgeons Faculty of Dental Surgery UK National Clinical Guidelines in Paediatric Dentistry Guideline for the Use of General Anaesthesia (GA) in Paediatric Dentistry, May 2008).

“Assessment of when the patient is ‘street fit’ or ready for discharge can and should be performed by nursing staff.” (British Association of Day Surgery Handbook Series Guidelines about the discharge process and the assessment of fitness for discharge)

What advice should be given about transport / escort for journey home?

‘It is the responsibility of the hospital to ensure that the patient has suitable transport home and, if necessary, to arrange hospital transport or a taxi.’ (Just for the Day Caring for Children in the Health Services 1991. p34 38.(i))

“Suitable transport home should be arranged, not public transport.” (Day Surgery Information, RCN 2007)

“The child should be taken home in private transport” (Issues in Paediatric Day Surgery, BADS 2008)

What advice should be given about lines of communication in the event of postoperative complications?

“Each family should be receive an instruction sheet advising parents on how and when to obtain help and advice. A discharge letter/instruction sheet advising parents how to obtain help. It should cover the following:

- Action in the case of an emergency, within a stated period, including telephone numbers
- Action in case non-emergency support is needed
- The name and telephone number of the person who has been alerted in the community”

‘Each family should be given a post-operative advice sheet to advise the parent on follow-up care and return to normal activities (section 25 (v) for suggestions on content.). Nursing staff should go through the sheet with the parent to check that its contents have been understood. Special care should be given to families from minority groups or others who might have problems with written English.’

(Just for the Day Caring for Children in the Health Services 1991. p34 38.)
‘Regardless of how patient discharge is organised within individual units, the actual discharge process should create a climate in which patients and their carers understand their roles and responsibilities in ongoing care and therefore feel confident to go home. In general, avoiding discharging patients too early will usually ensure that any essential discharge criteria are met. Preparation of specific discharge information should be collected in readiness for each patient so discharge is as smooth and unrushed as possible. The communication skills of nurses in coordinating this process are therefore of utmost importance.’ (British Association of Day Surgery Handbook Series Guidelines about the discharge process and the assessment of fitness for discharge.)

EVIDENCE LEVEL 4

CONSIDERED JUDGMENT: DISCHARGE

1. Volume of evidence

Guidelines available BADS, Just for the Day, RCN, AAGBI.

2. Applicability

high

3. Generalisability

Good

4. Consistency

Good

5. Clinical impact

6. Other factors

7. Evidence statements

8. Recommendations
### III. CONSULTATION & PEER REVIEW PROCESS

The draft Guideline document was sent to the following stakeholder organisations and their comments are noted in the table below:

1. Association of Paediatric Anaesthetists of Great Britain and Ireland
2. Association of Dental Anaesthetists
3. Association of Anaesthetists of Great Britain and Ireland
4. British Society of Paediatric Dentistry
5. Royal College of Anaesthetists
6. Royal College of Nursing
7. Royal College of Paediatrics and Child Health
8. Faculty of General Dental Practice (UK)
9. Faculty of Dental Surgery of the Royal College of Surgeons of England
10. British Society of Disability and Oral Health
11. Society for the Advancement of Anaesthesia in Dentistry

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Section number</th>
<th>Page number</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAGBI</td>
<td>References 19, 33</td>
<td>References 19, 33 should be updated to the latest AAGBI guidelines which are available on website</td>
<td></td>
</tr>
<tr>
<td>AAGBI</td>
<td>Reference 92</td>
<td>Reference 92 – is about to be replaced with a month or so</td>
<td></td>
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</tbody>
</table>

A rather large but comprehensive document but then it does address the patient journey and the various elements other than anaesthesia. Recommendation 1 stands on its own merit and somehow declaring it "mandatory" seems unnecessary! It in itself is open ended and invites recommendation number...
Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>AAGBI</th>
<th>13</th>
<th>Basically I feel dental children should be treated the same as day surgery children and not as outpatient dental with “unconscious sedation”, with the same standard of care. The impression I got from reading the document was that these were different.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAGBI Recommendation 15</td>
<td>13</td>
<td>It is probably not mandatory in all cases. There is data to support this opinion.</td>
<td></td>
</tr>
<tr>
<td>AAGBI Recommendation 21</td>
<td>14</td>
<td>Does this mean that a ‘registered children’s nurse’ should have a role in training nurses directly involved in providing perioperative care? Or does it mean that only a ‘registered children’s nurse’ may be directly involved in providing perioperative care?</td>
<td></td>
</tr>
<tr>
<td>ADA</td>
<td>REC 6</td>
<td>Not sure about recommendation 6 where it says the referring practitioner should ideally be a specialist in paediatric dentistry - in our area we have no such specialist but several Specialists in Special Care Dentistry and extremely experienced Senior Dental Officers who have been treating all categories of children with LA, RA and GA for many years (who also run and operate the GA list). I wonder how the Specialist in Special Care Dentistry sitting on the committee feels about this statement?</td>
<td></td>
</tr>
</tbody>
</table>
Guidelines for the management of children referred for dental extractions under general anaesthesia

| ADA | 13.2 | 24 | The section about the requirement for advanced life support for all; suggest this should be named as generic life support, this would cover both Resus Council UK APLS/ALS and local training. It will be prohibitively expensive if all ODPs/Nurses as well as the Anaesthetists have to get RCUK certificated ALS and APLS as some children in the scope range are of adult size for life support and some paediatric. |
| ADA | 9 | 10-11 | Recommendation 6 should become recommendation 3. ie. The recommendations should mirror the flow chart. Recommendation 5 should not include mention of 'preparation for GA'. Initially, the assessor should consider the use of LA with inhalation sedation (either restorative or extraction) |
| ADA | 12.2.1 | 18 | The assessment should ideally be undertaken by a Specialist in Paed. Dent. In a COMMUNITY (not hospital) setting. There is evidence that a great many referrals from GDP’s can be treated successfully, with or without Inhalation Sedation, in a Community situation. Ideally, the assessor should be the clinician who attempts treatment using the best principles of behaviour management and IHS, whilst imbuing a preventive philosophy in the attitudes and practice of the child’s parents or carers. Only if this fails to create compliance, should GA be considered. The community based specialist should also have access to Hospital based services, so that there is continuity of personnel between community and hospital. There should therefore be a seamless booking process for the child who needs further referral from Community to hospital (for GA) after demonstration that behaviour management and IHS have failed. |
| ADA | Rec 8 | 11 | Unnecessary for anaesthetist to be available at the pre-op assessment. Most pre-op clinics are nurse run anyway. An anaesthetist does however need to be available to discuss matters arising, at a convenient time that may be after the assessment. |
| ADA | Rec 15 | 13 | Some procedures are so brief that I would be siting the cannula as the child wakes up. This needs to be less didactic. |
### Guidelines for the management of children referred for dental extractions under general anaesthesia

| APAGBI | 11.1/11.2 | 16 | I’m not sure I’m really with the authors here on the discrimination between general and individual considerations. For example those conditions listed for general consideration are actually looked at clinically on an **individual basis**, for example BMI >30, say a big muscular teenager with BMI >30 is a very different proposition to the short obese “sphere” we often see and a decision to proceed to outpatient GA is taken on a very individual basis, not a general consideration. Equally some children with treated, operated cardiac conditions will be doable as outpatients while some even with completed surgery will not. Noting items for individual consideration somehow confers on them greater importance, which may not necessarily be appropriate. So in summary I’m not sure that this discrimination works but I sort of know what you are getting at! |
| APAGBI | 14.2 | 26 | “and topical local anaesthetic cream (emla / ametop) applied, if required” Isn’t it **always** required unless contraindicated or if in pre-assessment difficulties with previous use have been identified in the provocation of anxiety in the needle phobic for example. Otherwise doesn’t everybody get it? Perhaps I am particularly sensitive to this in that a private clinic in Cardiff (recently closed down) routinely did not use topical anaesthetic cream and we inherited all their failures and redos! |
| APAGBI 15.1 Analgesia regimens | 4. Opioids | 33 | Doses of anti-emetics in this section: Optimal dose of Ondansetron as a single agent is 150mcg/kg p16 apagbi PONV Guidelines. In combination with Dex it is probably 50 mcg/kg |
| APAGBI 17 References no 48 | 39 | RCoA Guidance on the provision of Paediatric Anaesthesia Services Most recent update was in 2010 [http://www.rcoa.ac.uk/docs/GPAS-Paeds.pdf](http://www.rcoa.ac.uk/docs/GPAS-Paeds.pdf) Perhaps this should be referenced rather than an older version. |
### Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>APAGBI</th>
<th>P18</th>
<th>2nd bullet point. There’s 2 levels of evidence and the references are out of order? Intentional</th>
</tr>
</thead>
<tbody>
<tr>
<td>APAGBI</td>
<td>P23</td>
<td>i) needs full stop at end of sentence</td>
</tr>
<tr>
<td>APAGBI</td>
<td>P24</td>
<td>End of 1st para needs full stop. End of 3rd para ref needs to be before the full stop to be consistent.</td>
</tr>
<tr>
<td>APAGBI</td>
<td>P25</td>
<td>Ref order after disabilities</td>
</tr>
<tr>
<td>APAGBI</td>
<td>P26</td>
<td>2nd para I’d omit “if appropriate” after pulse. 3rd para EMLA and Ametop needs to have the R in a circle i.e registered trademark.</td>
</tr>
<tr>
<td>APAGBI</td>
<td>P29</td>
<td>Bottom of page odd ref order</td>
</tr>
<tr>
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<td>P32</td>
<td>Under the table is the full stop necessary before the closing bracket. Full stop at the end of page.</td>
</tr>
<tr>
<td>APAGBI</td>
<td>P33</td>
<td>Ondansetron dosage agrees with BNFC but not APA guideline.</td>
</tr>
<tr>
<td>APAGBI</td>
<td>P34</td>
<td>Ref order after environment 3rd paragraph up from the bottom.</td>
</tr>
<tr>
<td>APAGBI</td>
<td>P35</td>
<td>Bottom bullet point perhaps it should say A responsible adult whose sole responsibility is to accompany the child home. We have repeat problems at Whitechapel with several siblings brought along with one adult, particularly in school holidays despite being told otherwise.</td>
</tr>
<tr>
<td>APAGBI</td>
<td>P37</td>
<td>Ref order</td>
</tr>
<tr>
<td>APAGBI</td>
<td>P47</td>
<td>Full stop after 2nd bullet point</td>
</tr>
<tr>
<td>APAGBI</td>
<td>References</td>
<td>I haven’t had time to comb through these but there seems to be some spacing errors eg ref 61 and 33</td>
</tr>
</tbody>
</table>

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Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>APAGBI General comments</th>
<th>It's a great guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTION FOR SICK CHILDREN (ASC)</td>
<td>General</td>
</tr>
<tr>
<td></td>
<td>The multidisciplinary group has employed sound methodology to produce a guideline which should be helpful to clinicians and others involved in the care of children undergoing outpatient dental extractions. On whole the text is excellent; however, I feel that a number of points, could have been stated with greater emphasis and/or clarity and, in some cases, usefully repeated in the Key Recommendations. Most of these points (detailed below) relate to the roles of parents or carers.</td>
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<td></td>
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</tr>
<tr>
<td>ASC</td>
<td>REC 7</td>
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<td>ASC</td>
<td>REC 9</td>
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<td></td>
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</tr>
<tr>
<td>ASC</td>
<td>REC 10</td>
</tr>
</tbody>
</table>

51
Guidelines for the management of children referred for dental extractions under general anaesthesia

| ASC | Rec 10-13 | preparation by paediatric nurses and play specialists."
| ASC | Rec 21 | It should probably be stated somewhere here, that a parent/carer should be invited to accompany the child at induction of anaesthesia. This is alluded to in the text under 14.2, p.25, last line, although this one sentence does not appear to do justice to the importance attached by parents to their being present at the induction of their child's anaesthetic and during recovery.
| ASC | Rec 15 | I think would be useful to state here that a parent/carer should be called to the recovery room as soon as their child is conscious. This point could also be stated more clearly in paragraph 16.1 (p. 34).
|     |      | Perhaps the use of local anaesthetic cream over possible venepuncture sites could be reinforced here: e.g. “Topical local anaesthetic cream (EMLA®/Ametop®) should be applied to possible venepuncture sites if intravenous induction is planned.” The relevant sentence in paragraph 3, p. 25 might also be usefully expanded to indicate the purpose of the cream: e.g. …..and topical local anaesthetic cream (EMLA®/Ametop®) applied to possible venepuncture sites if intravenous induction is planned.
The British Society of Paediatric Dentistry wishes to congratulate the Committee for producing this timely and comprehensive guideline, and greatly welcomes the opportunity to contribute to this consultation process. The document addresses an extremely important area of our clinical practice, and seeks to improve the quality of care for children requiring a general anaesthetic for dental treatment. We have a few general comments, as outlined below, as well as some specific ones.

**General comments.**

1. We feel the guidelines will be very valuable in service development and, as such, may benefit from integrating more closely with other guidelines related to GA, such as the existing RCS guidelines (Davies et al. 2008) which describes the dental aspects of this process in more detail.
2. A few members did question the rationale for limiting the guidelines to ‘extractions’ only and to ‘outpatient’ GA only. However, we appreciate that reference to other procedures may make this guideline unfeasibly long. However, it would be helpful to mention that restorative and other surgical procedures, could be provided under a GA if clinically indicated.
3. Generally we would like to see consistency in the use of ‘parent/carer’ throughout the guidelines or a statement at the beginning to clarify that where the reader sees ‘parent’ in fact ‘parent / person with parental responsibility’ applies.
4. The document is long. It would be more attractive if the list of recommendations could be presented as a separate document (as an appendix by way of an executive summary) and the complete recommendation and evidence review could stand alone.

<table>
<thead>
<tr>
<th>British Society of Paediatric Dentistry</th>
<th>The British Society of Paediatric Dentistry wishes to congratulate the Committee for producing this timely and comprehensive guideline, and greatly welcomes the opportunity to contribute to this consultation process. The document addresses an extremely important area of our clinical practice, and seeks to improve the quality of care for children requiring a general anaesthetic for dental treatment. We have a few general comments, as outlined below, as well as some specific ones.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>We would ask that the title of the guideline be reconsidered. There is some opinion from our members that the word “out-patient” should be replaced with the words “day case” in</td>
</tr>
</tbody>
</table>
the title and throughout the document. There should be no distinction between day case surgery for dentistry or for any other procedure. Many parents are under the impression that their child’s general anaesthetic for dental treatment was not a real operation. Every effort should be made to ensure that they realise the serious nature of the procedure, and the importance of including it in any subsequent recounting of their child’s medical history. There should also be parity with all other procedures which are carried out under general anaesthesia. Furthermore, payment is on the basis of an ‘admission’ not as an out-patient.

9.1 10 Recommendation 2 (and again 12.1, p17)

The referrer should certainly indicate in their letter why they are referring the patient for a potential GA, but it should be clear that the ultimate decision for a GA lies with the provider, and is determined at the dental assessment appointment. Furthermore, we feel it is not always appropriate for the referrer to discuss all the risks of the GA as they do not work in this setting. The wording in this recommendation should reflect this fact. A sample proforma would be useful as an appendix and BSPD would be happy to contribute to this.

9.2 10 Recommendation 4

The recommendation appears to be saying that even dental extractions for co-operative children under LA should not be done on the same day as the child presents with the need for an extraction. This would mean that a child presenting in pain and requiring an urgent extraction under LA would have to wait for until another day before having the treatment they need. It is agreed that if the child needs a GA, and does not warrant an emergency admission (obviously a child with an acute facial swelling may require a GA the same day as the assessment), it should be done on a different day to the assessment, but this may not necessarily apply to routine extractions under LA. Could this recommendation be slightly reworded?

9.2 10 Recommendation 5
### Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>9.2</th>
<th>11</th>
<th>Recommendation 6 (and again 12.2.3, p20)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>- The recommendation about the qualification/status/experience of the dentist who assesses and treatment plans the patient for subsequent care under GA is an issue that merits extremely careful consideration and phrasing. There could be significant repercussions depending on the exact wording of this recommendation, and therefore the Society has given it very serious thought. We recognise that many providers are not specialists, many of whom provide a high-quality service, and there is an insufficient workforce to realistically expect children should only be assessed by paediatric dentistry specialists prior to GA. However, it is of paramount importance that treatment planning is undertaken by a dentist with the necessary competencies, and is closely supported by a clinical network, led by a consultant in paediatric dentistry. There is evidence to suggest that the likelihood of a repeat dental GA is increased where the child has been treatment planned by clinicians without the necessary experience (your ref 17. Grant SM, Davids on LE, Livesey S. Trends in exodontia under general anaesthesia at a dental teaching hospital. Br Dent J. 1998 Oct 10;185(7):347-52)</td>
</tr>
</tbody>
</table>

We would therefore advise that the wording should be along the lines of:

‘The assessing dentist should ‘ideally’ be a specialist in paediatric dentistry or a..."
Guidelines for the management of children referred for dental extractions under general anaesthesia

dentist who can demonstrate the necessary competencies to carry out comprehensive treatment planning for children requiring a general anaesthetic. Where the assessing dentist is not a specialist, support should be readily available, if necessary, from a specialist or consultant, through established clinical networks. Access to input from other specialties, such as orthodontics and oral and maxillofacial surgery should be available for all children, to ensure optimum short and long-term treatment planning. The dentist should also be conversant with all clinical guidelines relevant to the assessment, diagnosis, treatment planning and management of children requiring dental interventions under a general anaesthetic.

This sentiment should be consistent throughout the document.

- Mention should be made for the need of appropriate pre-operative investigations, other than radiographs. For example, a reference could be given to NICE guidelines for those patients requiring pre-operative haematological investigations to identify sickle-cell trait or a thalassaemia.

- This section also refers to radiographs. We would suggest putting this in a separate section to emphasise the fundamental importance of these investigations to diagnosis and treatment planning. The guideline references both SIGN 47 and FGDP Selection Criteria for Radiography, both of which are explicit in suggesting that radiographs specifically bitewings are required to adequately diagnose caries in permanent and primary teeth. The current wording should be strengthened to indicate the use of bite wings when clinically indicated and possible, to ensure thorough diagnosis of carious lesions.
<table>
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<tr>
<th>9.2</th>
<th>11</th>
<th>Recommendation 7</th>
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<tr>
<td></td>
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<td>The recommendations for information to be provided in a written leaflet are far too ambitious and would result in a very lengthy and complex information sheet. We feel this should be limited to pre- and post-operative instructions. Issues such as the treatment options and relative benefits should be discussed at the initial assessment appointment, and a record of this discussion noted in the patient’s dental file.</td>
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<tr>
<th>9.2</th>
<th>11</th>
<th>Recommendation 8</th>
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<td></td>
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<td>In most units, children are initially assessed in dental clinics where there is no anaesthetist on site. Thus the recommendation that an anaesthetist be ‘available at the assessment appointment’ is not practical or achievable. The recommendation could be re-worded to say that ‘The opinion of an appropriately trained and experienced anaesthetist should be sought, where appropriate, prior to making the child an appointment for a GA.’ This will ensure that advice is sought, in the cases of significant medical or behavioural conditions, in a carefully planned manner, before the child is admitted (thus avoiding cancellations on the day of admission). But it really would not be possible on the same day as the child is seen for their dental assessment! Usually, the anaesthetist (or indeed the child’s named paediatrician/cardiologist/haematologist etc) is happy to give advice about the child’s fitness for a GA if they have access to the child’s medical notes, without actually seeing the child.</td>
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</table>

<table>
<thead>
<tr>
<th>9.4</th>
<th>12</th>
<th>Recommendation 13</th>
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<tr>
<td></td>
<td></td>
<td>It is not clear whether the section about resuscitation on training for dental staff is simply a recommendation, or a mandatory requirement. It would be helpful to have greater emphasis on this area of high importance. It would be worth looking at the RCS Surgery for Children: Delivering a First Class Service 9RCSENG – Professional Standards and Regulations) to see what they suggest (see Appendix attached).</td>
</tr>
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</table>
### Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>9.4</th>
<th>12</th>
<th>Recommendation 16</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>We recommend combining the section about safeguarding and the Children Act with recommendation 17. However, the point relating to ‘managing uncooperative children’ warrants it’s a separate recommendation. As it stands, there is ambiguity as to how somebody should manage an uncooperative child in terms of safe and ethical restraint. Could the guidelines be more specific here or perhaps signpost to other sources of information (Nunn J et al. Consent and the use of physical intervention in the dental care of children. Int J Paed Dent 2008; 18 (suppl. 1): 39-46 (DOI: 10.1111/j.1365-263X.2008.00937.x))</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>9.5</th>
<th>14</th>
<th>Recommendation 19</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>We feel the recommendation should be more specific regarding local anaesthesia. As it stands, it is not clear whether it is being recommended or not. One of our members has cited some studies which question the use of local analgesia in conjunction with treatment under GA.</td>
</tr>
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Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>We would therefore ask that the Committee consider whether these references impact on their recommendation.</th>
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<tbody>
<tr>
<td>9.6</td>
<td>14</td>
<td>Recommendation 24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>It is not clear what constitutes suitable transport? Some units specify this has to be a car. Could this be stipulated and stated in the patient information leaflet so that the responsibility lies with the family and not the clinical team, as implied.</td>
</tr>
<tr>
<td>11.1</td>
<td>16</td>
<td>It appears that there is considerable variability about the cut off points for a BMI for an out-patient dental GA across different units. Could the panel review their advice about BMI levels, as this may otherwise have a knock-on effect for increased referrals to specialist centres, such as children hospitals.</td>
</tr>
<tr>
<td>11.2</td>
<td>16</td>
<td>Epilepsy should be included in this list, rather than section 11.1</td>
</tr>
<tr>
<td>12.2.2</td>
<td>20</td>
<td>The definitive discussion and decision about how the child is going to be anaesthetised (ie iv or gas induction) would normally take place at the time of the GA. The child / parent may not have met the anaesthetist prior to this. It is not clear how this information can be included in the consent process before the family and anaesthetist meet, which is usually on the day of the procedure. Clarification is needed about this point.</td>
</tr>
<tr>
<td>12.2.3</td>
<td>20</td>
<td>The evidence cited to support management of the primary dentition refers only to balancing and compensating extractions and extraction of first molars (refs 30 and 31). It completely misses any references that consider restorative care for children, the need to assess the orthodontic status, or the need to consider all carious teeth when planning for extractions. There is evidence that restorations placed in primary care do not appear to last well and may not effectively prevent pain and sepsis (1,2). While restorations placed in specialist practices and clinical trials may be effective, a systematic review has confirmed that restorations placed in primary care (permanent and primary) do not perform as well (3). Leaving untreated caries to be treated after GA is not an option. We would request that</td>
</tr>
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</table>
the guideline expands more on the need for holistic treatment planning. Furthermore, some reference should be made to the need to seek the opinion of other specialists, such as orthodontists, in patients who require more complex treatment planning.


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<tbody>
<tr>
<td>13.1</td>
<td>23</td>
<td>Bullet point 1. Delete “with or without local anaesthesia” as this statement is superfluous.</td>
</tr>
<tr>
<td>14.1</td>
<td>25</td>
<td>The recommendation for the availability of a play specialist, is laudable, but really not realistic or practical in the majority of units.</td>
</tr>
<tr>
<td>14.5</td>
<td>27</td>
<td>The Society would welcome some form of wording in this section to recommend that dental staff should also be trained in, and involved in advanced paediatric life support. An amendment to the recommendation box 13 to this effect would also be welcome.</td>
</tr>
<tr>
<td>15.1</td>
<td>32</td>
<td>In some units, the most commonly used regime is IV paracetamol intra-operatively, followed by oral ibuprofen post-op if required. Could this regime be included?</td>
</tr>
<tr>
<td>18. Appendices</td>
<td>44</td>
<td>According to the AGREE checklist the guidelines have not been piloted among end users. We feel it is important that the content of the guidelines are discussed with groups of children and their families who have been through a dental extraction under GA. This will improve the patient-centredness of the guidelines.</td>
</tr>
<tr>
<td>18. Appendicies</td>
<td>46</td>
<td>Consider replacing ‘paracetamol and ibuprofen syrup’ with ‘paracetamol and ibuprofen (sugar free suspension)’</td>
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</tbody>
</table>
Guidelines for the management of children referred for dental extractions under general anaesthesia
## Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>Mark Davies</th>
<th>3</th>
<th>4</th>
<th>Evidence was not assessed as level 1-4: it was effectively assessed as 1-8. This use of a fractional sub-classification is unnecessary, overcomplicated and essentially arbitrary: is a 1- higher than a 2++? I would argue not. A 1++ is a 1: a 1- is a 2.</th>
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<tbody>
<tr>
<td></td>
<td>9</td>
<td>10</td>
<td>Mandatory requirements are not recommendations: they are mandatory requirements that ‘must’ be carried out (not ‘should’).</td>
</tr>
<tr>
<td></td>
<td>9.2</td>
<td>10</td>
<td>Recommendation 4: are all of the elements of this mandatory? ‘Before the day of surgery’ isn’t.</td>
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<tr>
<td></td>
<td>9.2</td>
<td>10</td>
<td>Recommendation 5: ‘preparation for the procedure including general anaesthesia’ is unclear: ‘preparation for the dental procedure’ and ‘preparation for the general anaesthetic’ would be better.</td>
</tr>
<tr>
<td></td>
<td>9.2</td>
<td>11</td>
<td>Recommendation 7: benefits are specific to the patient whereas risks are specific to the procedure. Implications of ‘proceeding or not proceeding’ are also specific to the patient. Who is an appropriate escort? What constitutes suitable transport home?</td>
</tr>
<tr>
<td></td>
<td>9.3</td>
<td>12</td>
<td>‘Immediately, effectively and efficiently’ is a more logical sequence.</td>
</tr>
<tr>
<td></td>
<td>9.4</td>
<td>13</td>
<td>Some of categorisation and sequence order is odd. Missing is a section on staff and in general mandatory requirements should be listed first.</td>
</tr>
</tbody>
</table>
### Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.5</td>
<td>14</td>
<td>Recommendation 19: we find infiltration of local anaesthetic to be useful for first molars.</td>
</tr>
<tr>
<td>9.6</td>
<td>14</td>
<td>Recommendation 24: Who is a responsible adult? What about a single parent who is registered blind but normally is responsible for the child?</td>
</tr>
<tr>
<td>11.1</td>
<td>16</td>
<td>The ordering of items is difficult to understand and is the sub-classification really useful? BMI needs to be modified for children: growth charts showing centiles are often better.</td>
</tr>
<tr>
<td>12.1</td>
<td>17</td>
<td>Why ‘the latter’, why not ‘this’? The first paragraph highlights a problem: it’s tagged as being ‘evidence level 4’ but the ‘recommendation’ is mandatory. Your approach seems to challenge the GMC/GDC guidance by stressing its lack of evidence base: I assume this is not your real intention. Just as you define ‘good practice points’ some important aspects of care are simply ‘good professional practice’ and may not require an evidence base.</td>
</tr>
</tbody>
</table>
| 12.2    | 17   | Assessment of preparation: inclusion of ‘and might be avoided altogether if the teeth can be restored or appropriate preventative measures are taken’ is correct but does not belong here! Recommendation 3: This is not a statement that requires an evidence base or a grade of recommendation – and certainly not the lowest grade of recommendation. You are using an evidence-based approach in an inappropriate way that is sabotaging the main
### Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
<th>Description</th>
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<tbody>
<tr>
<td>12.2.1</td>
<td>18</td>
<td>'Explore' the associated risks?</td>
</tr>
<tr>
<td>12.2.4</td>
<td>21</td>
<td>Recommendation 7: Does GRADE D apply to only the last statement or to the entire recommendation? It’s not clear.</td>
</tr>
<tr>
<td>14.2</td>
<td>26</td>
<td>Weight is not an 'observation', and is unlikely to change! Pulse rate, NIBP, and SPO2 are probably more useful ‘baseline obs’. If a child appears ill, is preoperative measurement of temperature really necessary?</td>
</tr>
<tr>
<td>14.3</td>
<td>26</td>
<td>This section illustrates the difficulties with your approach: it contains mandatory requirements but these are hidden in the text – and group tagged as ‘evidence level 4’! To be most useful this document needs to integrate requirements, recommendations and good evidence support where this is available.</td>
</tr>
<tr>
<td>14.6</td>
<td>28</td>
<td>Lists should be consistent: a pulse oximeter is a monitor whereas electrocardiography isn’t – it’s a type of monitoring. The term ‘ECG’ is widely used and probably better understood than electrocardiography. Recommendation 14: too long! The important message is lost and seemingly downgraded by giving it a GRADE D.</td>
</tr>
<tr>
<td>14.7</td>
<td></td>
<td>And what about if the patient suffers harm because the anaesthetist was distracted from care of the airway whilst attempting to secure IV access, or because the duration of the anaesthetic was significantly increased because of attempts to secure IV access? You seem to have ignored the feedback from the ADA Winter Meeting. Perhaps it would be better to point out that securing IV access is always good practice, but that the anaesthetist should take care not to compromise airway control, or significantly prolong the duration of anaesthesia by trying to secure it. The anaesthetist should always consider the use of a different anaesthetic technique if IV access is considered essential and should in an emergency always be prepared to use IO access.</td>
</tr>
</tbody>
</table>
Specifically, multiple attempts at ‘precautionary’ IV access should not be made. I note that the IV recommendation is tagged GPP but that only 2 ADA anaesthetists were on the Guideline Development Group.

<table>
<thead>
<tr>
<th>14.9</th>
<th>29</th>
<th>‘The safety of the child is paramount’: so why hide this at the end of section 14?</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>31</td>
<td>‘Analgesic techniques’. Post-operative or postoperative but not both. Capitalise Inflammatory in NSAID.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recommendation 18: ‘Paracetamol and NSAIDs, unless contra-indicated, should be used to provide post-operative analgesia’ might be better.</td>
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<tr>
<td></td>
<td></td>
<td>Recommendation 19: do you mean ‘added’ rather than ‘additional’?</td>
</tr>
<tr>
<td>46</td>
<td></td>
<td>VI Useful documentation: you have a section ‘a’ but no others!</td>
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<tr>
<td></td>
<td></td>
<td>The ‘example of postoperative information for patients and parents’ is well written. You would do well to ask whoever wrote it to look over the rest of the draft which is much less well written.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I hope that you find some of my comments helpful. This is an important document at an important time and needs to be right.</td>
</tr>
</tbody>
</table>
### Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>Title page</th>
<th>1</th>
<th>How disappointing to have the word “extractions” used in the document title. The better word would be “treatment”, encouraging wider awareness that more can be done for children with dental caries than wholesale extractions. This should also be considered at each point in the document when the word “extraction” is used.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>The word “outpatient” is not helpful. Why is the procedure not a “day case” like every other minor surgical procedure carried out under GA? For fiscal reasons, all trusts will count these procedures as a day case admission in any case. Use of a lesser term just perpetuates the idea amongst the public that dental treatment under GA is not a real surgical procedure under full anaesthesia, as in “They just had the gas”.</td>
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<td></td>
<td>8</td>
<td>In the assessment appointment box, under the bullet pointed list headed “General anaesthesia required”, include a point “First stage consent”. In the box labelled Hospital Appointment, include a point “Second stage consent”. Also replace the words “Dental extractions” with “Dental treatment”.</td>
</tr>
<tr>
<td></td>
<td>9.1</td>
<td>Recommendation 2. Agreed. A sample proforma would be useful as an appendix. Perhaps the BSPD should be asked to contribute to this.</td>
</tr>
<tr>
<td></td>
<td>9.2</td>
<td>Recommendation 5. “Psychological assessment” should be replaced with “assessment of co-operation”. We are NOT psychologists, but do assess the level of co-operation of the child for dental treatment.</td>
</tr>
</tbody>
</table>
|            | 11 | Recommendation 7. Bullet point 3. Many modalities of dental treatment are carried out for children under GA. A catch-all leaflet would be clumsy. The discussion concerning the relative benefits of the treatment is included in the...
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<td>consent process. This point should be deleted.</td>
</tr>
<tr>
<td>11</td>
<td>Recommendation 8. This would be a good thing in principle. But. Many units would struggle to have an anaesthetist available for pre-assessment sessions. Perhaps re-phrase to something like: “If any particular child requires assessment by an appropriately trained and experienced anaesthetist as part of the preparation for the anaesthetic procedure, appropriate arrangements should be made prior to the day of the procedure”.</td>
</tr>
<tr>
<td>9.4</td>
<td>Our paediatric anaesthetists will not adopt this recommendation. On this basis alone, the guideline cannot be accepted within our service, and instead, a local version will be generated.</td>
</tr>
<tr>
<td>9.5</td>
<td>Bleeding may however be reduced by additional vasoconstrictor agents. What is the evidence for this? Either the dentist should be encouraged to use LA or not. The recommendation is too open.</td>
</tr>
<tr>
<td>11.2</td>
<td>Epilepsy should be included in this list, rather than section 11.1</td>
</tr>
<tr>
<td>12.2.3</td>
<td>Recommendation 6. Fully agree. BUT the text immediately above the recommendation box is worded slightly differently. Please make them consistent.</td>
</tr>
<tr>
<td>12.2.4</td>
<td>Bullet point 4 should be deleted. This goes without saying, and is superfluous.</td>
</tr>
<tr>
<td>22</td>
<td>“Preoperative preparation……………….” This paragraph is woolly and should be deleted.</td>
</tr>
<tr>
<td>13.1</td>
<td>Bullet point 1. Delete “with or without local anaesthesia”. Superfluous.</td>
</tr>
<tr>
<td>15.1</td>
<td>In our unit, the most commonly used regime is IV paracetamol per-op, followed by oral ibuprofen post-op if required. We do not understand why this</td>
</tr>
<tr>
<td>Royal College of Nursing</td>
<td>Recommendation 21 and associated text throughout the document</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------</td>
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<tr>
<td></td>
<td>Recommendation 21 as stated implies that care does not need to be delivered by a registered children’s nurse, just involved with the training of staff. The Royal College of Surgeons (2007) “Surgery for Children, delivering a first class service” document states that all day case sessions must be staffed by children’s nurses. If there are registered adult nurses working in the environment who may be involved in the care of children they must be supervised by and work alongside registered children’s nurses in doing so. This recommendation needs to be amended accordingly to state that registered children’s nurses must be available to provide care and supervision of other nursing staff who may be involved in care.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Royal College of Nursing</th>
<th>14.1 Page 25</th>
<th>Please do not use the term ‘paediatric’ nursing staff. The term in relation to nursing is some 20 years out of date. Please change to ‘children’s nursing staff’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal College of Nursing</td>
<td>Recommendation 17 14.9 Page 13 Page 30</td>
<td>The document only talks about safeguarding training, consideration needs to be given to inclusion of a statement to ensure staff have considered referral, if neglect may be an issue –NICE guidelines state that poor dental hygiene is one of the first signs of neglect – the website <a href="http://www.cpdt.org.uk">www.cpdt.org.uk</a> is quite a useful link.</td>
</tr>
</tbody>
</table>
Guidelines for the management of children referred for dental extractions under general anaesthesia

| Surrey PCT | Flow Chart | This may need a few more points added to the pre-anaesthetic section. I am following our care pathway which we use in Surrey and we include the following extras:-  
|            |           | a. Pre-operative tests as required e.g. sickle cell. This is a reminder to ensure the assessing clinician checks if this is necessary.  
|            |           | b. Is Clinical Holding likely to be required?  
|            |           | c. Has an Orthodontic opinion been requested/is it needed?  
|            |           | d. Are there any other specialty areas which should be consulted in case joint working is needed/blood tests etc (e.g. ENT) – particularly if the child has a complex medical condition.  
| Rec 13     | 13        | I support the recommendation that there should be regular updates in resuscitation techniques together with practice as a team  
| Rec 15     | 13        | I thought that establishing intravenous access was mandatory, rather than “good practice”.  
| Rec 17     | 13        | Do all Anaesthetic staff attend regular training in the Safeguarding of Children? Should “regular be defined?  
| 12.1 Rec 1 | 17        | A full assessment should be done with an attempt at other techniques unless there is a clear reason for not pursuing these first. The referring dentist should clearly state the reason for referral and list any techniques/treatment carried out already.  
| 12.2.1     | 18        | Third bullet point – “general anaesthesia may not be required if alternative techniques are available and can be used e.g. conscious sedation, hypnosis, CBT and also use of alternative methods of pain and anxiety management”.
| 14.3       | 26        | It is also good practice to advise all members of the dental and anaesthetic team if |
**Guidelines for the management of children referred for dental extractions under general anaesthesia**

<table>
<thead>
<tr>
<th>14.4</th>
<th>12</th>
<th>27</th>
<th>Trainees, observers will be present or involved in the session whether they are anaesthetic or dental staff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.0</td>
<td>31</td>
<td>Top of page – typographical error Dicofenac should read Diclofenac.</td>
<td></td>
</tr>
<tr>
<td>15.0</td>
<td>32</td>
<td>The suggested analgesia regimens are very helpful.</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td></td>
<td>Problems to Look For</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pain – your child may be discharged with pain relieving medication, if more is required please purchase Paracetamol or Ibuprofen syrup from your pharmacy. I would suggest adding “if more is required” and also, should we add anything about checking allergies i.e Aspirin, in relation to the Ibuprofen.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>I trust that these are helpful comments and would like to reiterate that the document is excellent.</td>
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</tbody>
</table>
### Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Section number</th>
<th>Page number</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCoA</td>
<td>1</td>
<td>3</td>
<td>We agree with the final sentence that states: ‘It is emphasised that, whatever the length of stay, children undergoing general anaesthesia for dental extractions should receive the same standard of care.’ Given the strong emphasis on training and continuing practice (Recommendation 13, page 13), which is developed further in 14.4 (Page 27) the College suggests that more recognition of ‘professional judgment’ should be included within these guidelines which, we agree, are appropriate and timely.</td>
</tr>
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<td></td>
<td>7</td>
<td>4</td>
<td>States that the aims and remit are: ‘To develop an evidence-based consensus on the care pathway from referral to discharge for children and young people who are considered for outpatient dental extractions under general anaesthesia.’ This is a very laudable aim, however our concern is that the term ‘evidence-based consensus’ is slightly misleading as, of the twenty-five recommendations only three are supported by any evidence higher than level 4. Twenty-two of the twenty-five recommendations are, therefore, based on ‘expert opinion’ and we suggest that this reliance on expert opinion, rather than evidence base, means that there is a responsibility on the GDG to beware making statements such as ‘difficult to defend’ (14.7, page 29). We would also suggest that the following statement from the SIGN guidelines supports our suggestion for caution: ‘It is stressed that the standard of care required by law derives from customary and accepted practice rather than from the imposition of practices through clinical guidelines.’</td>
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<tr>
<td></td>
<td>9.2</td>
<td>11</td>
<td>Key Recommendation 8 includes the statement that ‘an appropriately trained and experienced anaesthetist should be available at the assessment appointment’. Whilst this is the idea l, it will frequently not be possible ‘at the time of appointment’. The College agrees that anaesthetic advice should be available before the day of surgery and we propose that the following wording should be considered: ‘A mechanism for obtaining the opinion of an appropriately trained and experienced anaesthetist should be in place, if required, before definitive treatment</td>
</tr>
</tbody>
</table>
is undertaken and the relevant medical case records should be provided’. There are units where such practice functions well, without an anaesthetist being available at the time of appointment if this occurs in the community setting, which is often the case in practice.

| 9.4  | 12 | Key Recommendation 10 includes the following ‘should include an opportunity to visit the department beforehand’. Whilst this is a laudable aim, for many families it is wholly impractical. A not atypical example to illustrate would be a child who lives two bus journeys and 60 to 90 minutes away from the hospital centre where the treatment will be carried out. The child’s mother also has other young siblings who need care arranged. They visit the local community dental clinic for assessment, where, having followed all the guidelines as recommended in this report, it is determined that extraction under general anaesthesia is indicated. Is it then sensible to insist that the child be sent to visit the hospital department before treatment? Our concern is that such a recommendation, whilst stating ‘should’, will still be seen as a standard that has to be met and this would not be beneficial to dental care as it is highly likely to produce greater numbers of late cancellations/none attendance. Suggested wording for this recommendation would be: ‘For some children, the opportunity to visit the department beforehand may be helpful and should be facilitated’.

| 9.4  | 13 | Agree completely with Recommendation 13 – this is relevant to later comments.

| 9.4  | 13 | Recommendation 14. The final sentence reads: ‘These standards should be uniform irrespective of the duration, location or mode of anaesthesia, and apply equally to children undergoing general anaesthesia for outpatient dental extractions.’ The College agrees with the statement about monitoring standards in the first sentence however suggests that the second sentence is too dogmatic and that the guidelines would be improved by omitting this sentence. As indicated earlier, the guidelines make clear reference to standards of training and continuing practice and such decisions should be left to the professional judgment of the anaesthetist.

| 9.4  | 13 | Recommendation 15. The College suggests that recognition of professional judgment needs to be included in this statement. It is suggested that the wording be altered to recognize these concerns and a suggestion would be: ‘The need for intravenous access should be considered for every case’. The statement that ‘if not prior to induction of general anaesthesia,
then immediately afterwards’ suggests that IV access prior to induction might be the gold standard in all circumstances and this, in itself, would cause significant debate in the paediatric anaesthetist community. Some form of ‘softening’ of the statement to recognise professional judgment would strengthen the value of these guidelines.

| 9.5 14 | Recommendation 19. This reads: The use of local anaesthesia to provide analgesia for dental extractions under general anaesthesia is of minimal benefit. Bleeding may however be reduced by additional vasoconstrictor agents. (GRADE B), whilst Recommendation 19 on Page 31 reads: Infiltration of local anaesthesia with additional vasoconstrictor may have a role in achieving haemostasis, with possibly some analgesic benefit in the older child who is able to understand the sensation of numbness. (GRADE B). The College agrees with the latter statement on Page 31 and suggests that this should be the Key Recommendation statement in 9.5 (Page 14). An important aspect on the use of local is present in the latter statement i.e. ‘the older child who is able to understand the sensation of numbness’. The statement on Page 18 in 12.2.1 (first bullet point, last sentence): ‘options for the dental extractions include: local anaesthesia; local anaesthesia supplemented with conscious sedation’ suggests that, in the right children, local anaesthesia can be very effective and is therefore somewhat contrary to Recommendation 19 as it reads on Page 14.

| 12.2.1 18 | Separate assessment visit. The first sentence reads ‘Assessment should occur at a separate hospital visit and incorporate…’ Pre-assessment (both dental and anaesthetic) often takes place in community dental settings and, provided appropriate protocols for assessment have been developed, the College suggests that this is acceptable practice and should be recognised as such and therefore it is suggested that the word ‘hospital’ be deleted from this sentence. The example cited in 9.4 above, adds weight to the reasons why there should be some flexibility about where pre-assessment occurs – how it is done is the important point.

| RCoA 12.2.3 20 | Third paragraph. As identified in 9.2 (page 11) above, the statement about the need for an anaesthetist to be available at the time of the pre-operative visit should be changed to: ‘A mechanism for obtaining the opinion of an appropriately trained and experienced anaesthetist should be in place, if required, before definitive treatment is undertaken and the relevant medical case records should be provided’. The reasons supporting this request
Guidelines for the management of children referred for dental extractions under general anaesthesia

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<tr>
<td>RCoA</td>
<td>12.2.4</td>
<td>21</td>
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<tr>
<td></td>
<td>Following on from above, the College agrees that 'there should always be access to the opinion of a suitably trained and experienced anaesthetist' but suggests that more suitable wording would be ‘<strong>mechanisms should be in place to ensure</strong> that there is always access to these opinions….etc'.</td>
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</table>

| RCoA | 12.2.4 | 22 |
|   | Recommendation 8 be reworded as ‘**A mechanism for obtaining the opinion of an appropriately trained and experienced anaesthetist should be in place, if required, before definitive treatment is undertaken and the relevant medical case records should be provided**' in the light of the comments in the previous box. |

| RCoA | 14.3 | 26 |
|   | The second and third sentences state: They should be anaesthetised by a consultant anaesthetist on the specialist register, who in addition to undertaking regular and relevant paediatric practice sufficient to maintain core competencies, possesses dedicated training and skills in paediatric dental general anaesthesia, and undertakes appropriate continuing professional development (CPD) [50, 51, 13, 48]. Current guidance states that children may also be anaesthetised by a Staff Grade or Associate Specialist (SAS) anaesthetist, or Specialty Doctor (SD), provided that he or she satisfies the same criteria and that there is a nominated supervising consultant anaesthetist with appropriate experience [48]. The College agrees wholeheartedly with this statement and this is the reason why it is important that the guidelines recognise the importance of ‘professional judgment’ when finalising the guidelines as mentioned on several occasions above. |

This section then goes on to state: ‘**Trainees anaesthetising children should always be supervised by a consultant with appropriate experience**’. The College suggests that the word ‘appropriate’ be added to the supervision of trainees as the type of supervision required by a ST7 trainee who has completed their advanced paediatric anaesthesia training successfully and is applying for consultant posts with this special interest area will be quite different from say that for a ST4. We suggest this reads: **‘Trainees anaesthetising children should always be appropriately supervised by a consultant with appropriate experience’**
Guidelines for the management of children referred for dental extractions under general anaesthesia

| RCoA  | 14.6 | 28 | With regard to minimal monitoring, the final two sentences in the first paragraph read: 'These minimum standards should be uniform irrespective of the duration, location, or mode of anaesthesia, and apply equally to children undergoing outpatient dental extractions. The following monitoring devices are essential to the safe conduct of general anaesthesia:'. We suggest that they read as follows: 'These minimum standards should be uniform and apply equally to children undergoing outpatient dental extractions. The following monitoring devices must always be available to ensure the safe conduct of general anaesthesia:'. The reasons for this change have been rehearsed above and we believe that such a modification would enhance the standing of such guidelines.

Continuing on from this, the College suggests that the following changes are considered for later paragraphs:

It may not be possible to attach all monitoring before induction of anaesthesia in children due to lack of, or potential loss of, cooperation. However, monitoring should be commenced as soon as possible and the reasons for any delay recorded in the patient’s case-notes. The next sentence should be left out i.e.: If it is necessary to continue without a particular monitoring device, the anaesthetist should clearly record the reasons for this in the anaesthetic record. A detailed summary of the anaesthetic technique employed and the information provided by the monitoring devices should be clearly recorded.

Monitoring should be maintained postoperatively until the child has fully recovered from general anaesthesia (i.e. has reached the end of Stage 1 Recovery), with clinical observations being supplemented by the following monitoring devices where appropriate:

| RCoA  | 14.7 | 29 | Intravenous access. The first paragraph states: ‘Recent national surveys have demonstrated that it is widely considered to be good practice to establish intravenous access during the course of general anaesthesia for outpatient dental extractions in children. Approximately 80% of anaesthetists surveyed reported that they would regularly obtain intravenous access either prior to induction of general anaesthesia or immediately afterwards [63-65]. This would suggest that failure to do so might be difficult to defend in the event of a patient suffering harm during general anaesthesia. (Evidence Level 4)’
We are aware that a paper has recently been accepted by Paediatric Anaesthesia arguing the case for there not being a need for IV access in some dental outpatient GA cases. In addition, it is suggested that the 80% of anaesthetists quoted surveyed may be a selected group. As a result, the College suggests that the guidelines group should consider removing the last sentence in this statement (again professional judgment should be considered and the College considers that guidelines are more valuable if they do not include explicit medicolegal comments such as is made in the last sentence. It is suggested that the guidelines group consider this recommendation carefully and the written guidance given. There is much to commend a brief statement that the Guidelines development group consider it is best practice to ‘consider the need for intravenous cannulation for every child’ leaving the rest to the professional judgment of the ‘consultant anaesthetist on the specialist register, who in addition to undertaking regular and relevant paediatric practice sufficient to maintain core competencies, possesses dedicated training and skills in paediatric dental general anaesthesia, and undertakes appropriate continuing professional development (CPD)’ a view that the College would support wholeheartedly within clinical guidelines.

<table>
<thead>
<tr>
<th>APA</th>
<th>9.2</th>
<th>10</th>
<th>Presumably this includes a full medical history and physical examination</th>
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<tbody>
<tr>
<td>9.2</td>
<td>11</td>
<td></td>
<td>Consider promoting the role of Hospital Play Specialists and similar in preparing children and young people for medical procedures and reducing the GA rate and mention some of the techniques utilised (guided imagery; distraction)</td>
</tr>
<tr>
<td>9.4</td>
<td>12</td>
<td></td>
<td>Rec 10 And full medical assessment (history and physical examination)? Who should do this? Rec 11 Consider adding ‘age appropriate / needs appropriate’ And young people should be cared for in appropriate facilities that are separate from those for younger children / adults Rec 12 Insert ‘college / work’</td>
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</table>
### Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.4</td>
<td>13</td>
<td>Rec 16 Insert relevant legislation for Scotland (I think that it is the ‘Children’s Action (Scotland), 1999’, but please check Rec 16 &amp; 17 ‘Child protection’ not safeguarding is the appropriate term in Scotland. Suggest inserting ‘safeguarding / child protection’</td>
</tr>
<tr>
<td>9.5</td>
<td>14</td>
<td>Rec 18 Is there any correlation between removal of primary versus permanent dentition i.e. are 6s more painful than ds?</td>
</tr>
<tr>
<td>9.6</td>
<td>14</td>
<td>Rec 21 Who should be the nominated medical for the child, bearing in mind that most dentists are not medically trained and that anaesthetists are not bed holders?? In practice many DGHs, children admitted for surgical procedures are admitted under the nominal care of a paediatricians; would the GDG recommend this arrangement also for those undergoing dental procedures and in specialist as well as district hospitals? What arrangements for medical supervision would the GDG propose for patient unexpectedly requiring admission after dental GA?? Rec 24 What is suitable transport? Is public transport OK?</td>
</tr>
<tr>
<td>12.2.1</td>
<td>18</td>
<td>When does full medical clerking take place (history and physical examination) and who does this? Including the role of Hospital Play Specialists and similar in managing anxiety / improving compliance and avoiding GA</td>
</tr>
<tr>
<td>12.2.2</td>
<td>19</td>
<td>Young people &gt; 16 give their own consent Add ‘Children’s Act, Scotland’ In Scotland, the parents / guardian’s of competent YP younger than 16 or incompetent YP &gt; 16 CANNOT consent on behalf of their child Information for children / YP should also be provided in a format that they can understand</td>
</tr>
<tr>
<td>12.2.3</td>
<td>20</td>
<td>The dental GA record should be collated with the main clinical hospital record for the patient</td>
</tr>
<tr>
<td>12.2.4</td>
<td>21</td>
<td>But limited to information about GA and pain management</td>
</tr>
<tr>
<td>12.2.4</td>
<td>22</td>
<td>Rec 7 Who clerks and examines the patient?</td>
</tr>
<tr>
<td>13</td>
<td>22</td>
<td>Does this ruling apply to all parts of the UK</td>
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</table>
## Guidelines for the management of children referred for dental extractions under general anaesthesia

<table>
<thead>
<tr>
<th>13.1</th>
<th>23</th>
<th>Add ‘age-appropriate’; adolescents and YP don’t want child-friendly facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1</td>
<td>25</td>
<td>Appropriate early referral to the HPS may obviate the need for GA entirely</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Appropriate environment for YP too, separate from children</td>
</tr>
<tr>
<td>14.2</td>
<td>26</td>
<td>And SpAO2 and, in YP, BP too</td>
</tr>
<tr>
<td>14.4</td>
<td>27</td>
<td>Rec 12 College / work. Driving / bikes</td>
</tr>
<tr>
<td>14.8</td>
<td>29</td>
<td>Add ‘Children’s Act, Scotland’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Add safeguarding / child protection</td>
</tr>
<tr>
<td>14.9</td>
<td>30</td>
<td>Insert ‘safeguarding / child protection’</td>
</tr>
<tr>
<td>16.1</td>
<td>34</td>
<td>Age-appropriate facilities for YP</td>
</tr>
<tr>
<td>16.2.1</td>
<td>35</td>
<td>Define ‘suitable transport’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APA General comments</th>
<th>Needs a shorter working title for header/footer, Need statement from APA, Publication date, Review date</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Need working base for members of committee</td>
</tr>
<tr>
<td></td>
<td>Email address of APA for comments</td>
</tr>
<tr>
<td></td>
<td>Please provide details of search ie date, databases searched, search criteria</td>
</tr>
<tr>
<td></td>
<td>Comment on Children’s Act etc. Probably need to check what covers what in the 5 countries that make up the APAGBI region. This means that England, Scotland, Wales, Northern Ireland and Eire may all be different. Might be easier to do this as on comment.</td>
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<tr>
<td></td>
<td>Reference for grades of evidence</td>
</tr>
<tr>
<td></td>
<td>11.2 need for premedication</td>
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</table>

78
<table>
<thead>
<tr>
<th><strong>Guidelines for the management of children referred for dental extractions under general anaesthesia</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>12.2.1</strong> Not practical here. Ours are seen just prior to anaesthesia and are given a gas induction and staggered arrival times. IV access is gained in all children prior to surgery. Not sure that the extra assessment is of great use. Nearly all our daycases are seen on effectively the same basis although all are seen before the list starts and because they are on a ward they get ametop/emla if appropriate.</td>
</tr>
<tr>
<td><strong>13.1</strong> If the GA is given in a remote location from main the atres appropriate anaesthetist and ODP/assistant should be available.</td>
</tr>
<tr>
<td><strong>13.2</strong> Add comment about transfer to PICU if required.</td>
</tr>
<tr>
<td><strong>14.7</strong> I know that this was a tricky topic at the ASM. Wonder if it would be worth asking a few colleagues who undertake medico-legal work the feeling for those who do not obtain iv access if they ended up in a court of law. You could claim that these children were not getting the same level of treatment as everyone else. Do you need to discuss the paper presentation from Scotland about successful GA without iv yet then say that the AAGBI good practice is to put in one.</td>
</tr>
<tr>
<td>Need an audit tool.</td>
</tr>
<tr>
<td>The patients here are not in the Hospital more than 1 hour. We sometimes use Paracetamol melts preop. Is there any evidence that these are useful? Can you consider mentioning them as an alternative if they done?</td>
</tr>
<tr>
<td><strong>References</strong> have a number of extra initials in which need removing.</td>
</tr>
<tr>
<td><strong>APA Reviewer 1</strong> This is a very well presented guideline produced by a relatively large and senior group, and has the potential for equally broad based readership. It fits in well with the needs of commissioners to provide integrated care pathways for dental care of children. Levels of evidence are generally low i.e. ultimately much is largely professional opinion/good practice.</td>
</tr>
</tbody>
</table>
I have a few general and a few specific comments.

**General**

Much of the dental care for children is delivered by general dental practitioners and there are concerns recently raised in the media about making proper attempts to preserve deciduous teeth i.e. this is also an important focus nationally. The population who present with caries are often from families with complex social needs and the same families are sometimes poorly compliant with all aspects of preventative and active treatment. Associated poverty is common in both urban and rural areas, as is poor literacy, limited access even to public transport. All of this needs to be born in mind in provision of a day case/OP service.

Funding for dental services is often also poor, and is separate from other children's surgical services. This is fundamental to all elements of provision e.g. in relation to separate preop assessment, written information.

With respect to this guideline I am sure that the authors are aware of the difficulties in providing this service, but I think this might be more clearly reflected in recommendations. This area of care is a true “cinderella” service, and deserves better access to good quality services-perhaps addressing a recommendation specifically to commissioners would be appropriate?

I am slightly disappointed that an opportunity has not been used to recommend an ideal system to maximise throughput for this population e.g. staggered admission, home administration of
pre-emptive analgesia and topical LA etc. This might still be usefully provided within appendix.

Specific

Page numbers ultimately should be provided in index of final draft.

Algorithm Page 9. There is a recommendation that Consultants in paediatric dentistry are involved. Are these currently available in all centres? (e.g. In my city we have consultants in oral surgery who have paediatric expertise and they would fulfil this role-they have close links with the community dental service). I am unclear if this is also for delivery of the operative part of pathway in complex cases, and cannot find clear further repetition/elaboration of the CPD role in the recommendations section, though it is noted that staff highly trained in paediatric dentistry are required in decision making and delivery of service.

It might be useful to link all major points in the algorithm more clearly with the recommendations.

Recommendation 5

Referral and Pre-assessment

Can all families afford to come /organise 3 appointments for initial dental assessment, pre-anaesthetic assessment and definitive treatment? I think there need to be real efforts by
Guidelines for the management of children referred for dental extractions under general anaesthesia

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<tr>
<th>APA</th>
<th>Reviewer 2</th>
<th>Clear and succinct guidance and helpful clarification</th>
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<tr>
<td></td>
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<td>Only negative comments relate to complying with the requirements of NHS Evidence and including a full description of methodology, level of evidence etc.</td>
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<td>If the guideline is not rigorous for a guideline, then I assume that you will brand as guidance or</td>
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secondary care providers to organise this on the day of referral if at all possible, and not just if treatment is urgent. This is a very important issue in rural areas, and with poorly compliant families.

Recommendation 13/21

Paediatric Resus training to be organised by a registered children's nurse. Would an RTO with appropriate skills suffice?

Could Resus training for anaesthetists and dental practitioners not be organised cf. that for other anaesthetists i.e. scenario based? (see APA website, Education, Resus)

Recommendation 17

There are excellent additional references on CP and the dental team which might be usefully included. These might be worth including. See enclosed and www.cpdt.org.uk (Child Protection and the dental team).

References are generally thorough. However some of the (anaesthetic) references might also be usefully updated in final draft e.g. GPAS and Curriculum. There may be others.
### Guidelines for the management of children referred for dental extractions under general anaesthesia

**APA Reviewer 3**
- Really good document

**APA Reviewer 4**
- General - This is an excellent set of guidelines, it is well researched, comprehensive, well put together and easy to read. The authors should be commended for a good piece of work. I am particularly pleased that the previous GDC/GMC guidance with respect the "the hospital setting" is reinforced given that there remain a few isolated clinics in Wales that operate well outside this definition. In this regard I wondered what the timing for the publication of this guidance was and the method of dissemination to ensure pan-UK coverage.

- Specific comments- I have a few specific comments and I have put these on the proforma and this is attached separately.

**APA Reviewer 5**
- It is very nicely written and very clear. I expect it will be very useful to those setting up or running a service.

- My feedback doesn't really fall into the sort easily charted on the form so I apologise for just a list of thoughts... clinically based only!

- I am sure the title was much discussed; however calling the patients "outpatients" is a bit confusing. I would call the majority who have treatment in outpatients departments "outpatients!" i.e. they do not have a GA. Here, those that have a GA are all admitted and are day cases (maybe this is just a local policy)
It is so difficult when much has to be Grade 4 recommendations, but the authors explain that they made these decisions based on the "clinical experience and opinion of the Guideline Development Group" itself, I wonder if they did or did not ask a wider group? Having slogged through asking widespread opinions on the airway guideline I rather wish we had taken this straightforward option but we were advised we had to consult further afield!

Re Recommendation 17, what level of safeguarding children would be required, it may be useful to clarify as we are having these discussions, and have recent guidance from the APA/ RCPCH advice.

Interestingly, there are no national standards for training of recovery staff, either adult or paediatric, which is odd but apparently true!

I would not have such reservations about using opioids as expressed. However I realise that our patients may have more extensive work done and possibly more difficult extractions, however I suspect that is true of many paediatric hospitals case mix, so opioids are used quite routinely.

Overall the message seems to be "make sure you treat children having a GA with the same standards of care even if they are "just" having dental extractions" which is an excellent and valuable message.

Good luck to the team, fantastic job.
Guidelines for the management of children referred for dental extractions under general anaesthesia

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<th>APA</th>
<th>Reviewer 6</th>
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<td>It is a very comprehensive document, which leaves absolutely nothing to the imagination. I have a couple of comments, for what they are worth. It is hard to argue with any of the conclusions or recommendations, but they could probably have been expressed in many fewer words. I think it would be useful if APA guidelines could be summarised in a way that would be possible to fit onto no more than 2 sides of A4 paper. This summary could be provided as a separate document, with the full guideline document to support it, by providing a report of the process, evidence and reasoning. If APA guidelines are generally going to use the same system of methodology and evidence grading, that could be explained in a generic document and could avoid each guideline having to reproduce it. (Comment CST: this may be OK but does not apply to all and actually need to include evidence of methodology within the main document. There is no reason why however that a summary should not just refer to the full guideline. The dental guideline contains a lot of recommendations which apply to the general care of children undergoing anaesthesia - child friendly environment, safeguarding, suitably trained staff etc. Providing discussion and evidence for all the recommendations about facilities, environment, perioperative care and discharge criteria etc, contribute heavily to the length of the document. It must be possible to refer to good practice guidelines for paediatric anaesthesia and make this guideline a bit more specific to the issues surrounding outpatient extractions. The one specific recommendation in the midst of all the generic stuff relates to the use of IV access - and that is probably the one that should stand out! Appendix V has the title Research and Audit markers, but no suggestions are listed. If the guideline is going to offer a suggestion for postoperative information, as it does in Appendix VIa, it should be rewritten in plain English. The language used in the example may well be beyond many of the parents whose children need this sort of treatment. I'd also be slightly concerned about advising parents to let boiling salty water 'cool until it can be used...</td>
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without burning' and to use frozen peas wrapped in a towel for facial swelling. (On page 37, it refers to the example advice in Appendix VIIa, but it is actually Appendix VIa)
Response to comments from APA/RCoA

First comments

**Recommendation 5** - assessment appointment - we are pleased to see that the requirement for a separate assessment appointment is now modified and includes the sensible approach that treatment may proceed at the initial visit if required by the clinical situation or the social circumstances of the family.

**Recommendation 14** - intraoperative monitoring - although we fully agree that all patients should be adequately monitored we would recommend a more pragmatic approach particularly in relation to the use of end-tidal CO2 monitoring. ETCO2 monitoring can be difficult to use with a nasal mask and often contributes little useful information in this situation; adequacy of ventilation and confirmation of an unobstructed airway with the use of this unique dental anaesthetic technique depends mostly on clinical observation of the patient and adequate movement of the reservoir bag rather than relying on the data obtained from ETCO2.

**Recommendation 15** - iv access - we support the softening of the stance on iv access from being 'mandated' to being 'considered' for every patient. We would like to see more balance in the discussion on this point as there is a large series (6000 +) published in Pediatric Anesthesia in late 2010 (see abstract attached) which suggests that outpatient dental anaesthesia may safely proceed without iv access. As an evidence based document the guidelines should air both sides of the argument particularly as this is a controversial area of practice.

**Recommendation 18** - post op analgesia - clearly we fully support the provision of adequate postoperative analgesia following dental surgery but we were left with the impression from the guidelines that all children no matter how minor the procedure should have NSAID & paracetamol prescribed perioperatively. This is unlikely to be necessary if for example a single anterior deciduous tooth is removed. Perhaps a slight softening of the guidance to say that the need for multimodal analgesia should be considered for all children rather than mandated as stated in the footnote to Table 1.
Second comments

I think it would be of benefit to provide an executive summary, which lists the recommendations with reference to the full guideline for the rationale. This would make the recommendations accessible to potentially interested parties who lack the motivation to read the whole thing.

From a patient information point of view, if the guideline is going to offer a suggestion for postoperative information, as it does in Appendix VI, it should be presented in plain English. The language used in the example may well be beyond many of the parents whose children need this sort of treatment. I would also have a slight concern about advising parents to let boiling salty water 'cool until it can be used without burning' as I think there could be mishaps if parents misjudge the temperature of the solution.

Third comments

General Comments

I believe that this is generally an extremely well presented piece of work.

However, I am not at all sure that APA comments from Feb 2011 have been adequately addressed in the final version.

My main concerns continue to be

1. Whether this constitutes “guidance” or can be regarded as a “guideline” (a large amount of what is presented is professional consensus)
2. Is the material sufficiently broad to cover all healthcare settings (e.g. remote and rural vs. urban) in all parts of the UK (in terms of references used). An example would be in relation to Consent (page 23).
Guidelines for the management of children referred for dental extractions under general anaesthesia

3. Some recommendations would benefit from being less didactic (see Specific comments), require correction, and need more detail to facilitate implementation.

Specific Comments

Rec 5, 12.2.1, 12.2.3

“Unless there is an urgent need for treatment assessment SHOULD be undertaken as a separate appointment” I actually see reasons why it might be both possible and beneficial to undertake assessment more succinctly i.e. at presentation. This is a model widely used in adult practice. Clearly it would require the appropriate people and facilities to be available, but the socio-economic benefits are obvious. It may also be that e.g. Telemedicine links with the specialist centre could facilitate this assessment. The paediatric dentist may also be able to travel to the centre i.e. avoiding the patient needing to travel into specialist centre (this occurs already in some parts of the country). Therefore I would suggest a modification of wording to “Unless there is an urgent need for treatment assessment MAY BEST be undertaken as a separate appointment”.

N.B. It is very unlikely that this assessment will include face to face assessment by an anaesthetist unless there is significant co-morbidity and/or need for special psychological preparation. I am not sure whether this is what is meant by “preliminary anaesthetic assessment” in 12.2.1

12.2.3 para 3 “The assessing dentist should be conversant with the clinical guidelines relevant to the assessment, diagnosis etc” – are references 32 and 33 able to give the full list of guidelines?

Rec 6 Are the competencies to carry out a comprehensive treatment plan for children requiring GA for dental extractions, separately referenced? Please include
Guidelines for the management of children referred for dental extractions under general anaesthesia

Recommendation 12 I wonder why just the effect (risk) of general anaesthesia on post of cognition and behaviour are identified here? It may be important to mention other less common but serious risks. I think this whole recommendation should be simplified and be in keeping with GPAS 2010 i.e.

7 Patient information/consent

7.1 Before the admission of a child for elective surgery, parents should receive full written information together with a contact telephone number should they have further questions. Written information should be based on or make reference to that provided in ‘Anaesthesia Explained’ and the information leaflets relating to paediatric anaesthesia that are available from the Royal College of Anaesthetists.30

Or include reference to the information in “Anaesthesia explained” on risk.

For a child in good health having minor surgery:

1 child in 10 (like one person in a large family) might
Guidelines for the management of children referred for dental extractions under general anaesthesia

experience a headache, sore throat, sickness or dizziness.

_1 child in 100_ (like one person in a street) might be mildly allergic to one of the drugs that has been given.

_1 child in 20,000_ (like one person in a small town) might develop a serious reaction (allergy) to the anaesthetic. Throughout the whole of life, an individual is at least 100 times more likely to suffer serious injury or death in a road traffic accident than as a result of anaesthesia.

In addition it may be helpful to say when it would be felt reasonable for a child to return to school or nursery?

Rec 16

Where is training on the management of the un-co-operative child available?

Could this be “All staff should be given guidance and have gained supervised experience in the management of the unco-operative child” (include RCN reference use of restraint?)
Guidelines for the management of children referred for dental extractions under general anaesthesia

Rec 19

Local anaesthesia DOES provide analgesia however side effect (i.e. numbness”) is un pleasant/unfamiliar particularly for the young child. Therefore “possibly some analgesic benefit” is incorrect and should be re-worded but to include ref to side effect.

Page 38, 5 “Evidence for efficacy (of local anaesthesia) is limited “ is misleading-what about the huge population of adults and children who undergo LA extraction?

Table 1 (page 37) - Has this been cross checked with APA Pain Guidance?

Recommendation 21

“A registered children’s nurse must be available to provide care for paediatric patients and to supervise other nursing staff who may be involved in the care of children…”

Whilst I would be very supportive of defining the competencies required, I am not sure this is achievable/possible or desirable. The RCN are currently looking at this sort of recommendation and would suggest their input/advice on wording.
Guidelines for the management of children referred for dental extractions under general anaesthesia

12.2.2

A generic and cross UK reference re. Consent might be provided by using the GMC 0-18 guidance (cf. Just Children Act 2004).

In para 5 “Other than in exceptional circumstances it is not acceptable to provide children or parents/carers with new information at the time of general anaesthesia” is not sufficiently clear and the reference used actually says

5.2.3 The anaesthetic room is not an acceptable time or place to provide patients with new information other than in exceptional circumstances. (AAGBI 2006)

This original wording is clearer.

Comments first time around (Feb 2011)

This is a very well presented guideline produced by a relatively large and senior group, and has the potential for equally broad based readership. It fits in well with the needs of commissioners to provide integrated care pathways for dental care of children. Levels of evidence are generally low i.e. ultimately much is largely professional opinion/good practice.

I have a few general and a few specific comments.
Guidelines for the management of children referred for dental extractions under general anaesthesia

General

Much of the dental care for children care of children is delivered by general dental practitioners and there are concerns recently raised in the media about making proper attempts to preserve deciduous teeth i.e. this is also an important focus nationally. The population who present with caries are often from families with complex social needs and the same families are sometimes poorly compliant with all aspects of preventative and active treatment. Associated poverty is common in both urban and rural areas, as is poor literacy, limited access even to public transport. All of this needs to be born in mind in provision of a day case/OP service.

Funding for dental services is often also poor, and is separate from other children’s surgical services. This is fundamental to all elements of provision e.g. in relation to separate preop assessment, written information.

With respect to this guideline I am sure that the authors are aware of the difficulties in providing this service, but I think this might be more clearly reflected in recommendations. This area of care is a true “cinderella” service, and deserves better access to good quality services—perhaps addressing a recommendation specifically to commissioners would be appropriate?

I am slightly disappointed that an opportunity has not been used to recommend an ideal system to maximise throughput for this population e.g. staggered admission, home administration of pre-emptive analgesia and topical LA etc. This might still be usefully provided within an appendix.

Specific

Page numbers ultimately should be provided in index of final draft.
Algorithm Page 9. There is a recommendation that Consultants in paediatric dentistry are involved. Are these currently available in all centres? (e.g. In my city we have consultants in oral surgery who have paediatric expertise and they would fulfil this role - they have close links with the community dental service). I am unclear if this is also for delivery of the operative part of pathway in complex cases, and cannot find clear further repetition/elaboration of the CPD role in the recommendations section, though it is noted that staff highly trained in paediatric dentistry are required in decision making and delivery of service.

It might be useful to link all major points in the algorithm more clearly with the recommendations.

Recommendation 5
Referral and Pre-assessment

Can all families afford to come/organise 3 appointments for initial dental assessment, pre anaesthetic assessment and definitive treatment? I think there need to be real efforts by secondary care providers to organise this on the day of referral if at all possible, and not just if treatment is urgent. This is a very important issue in rural areas, and with poorly compliant families.

Recommendation 13/21

Paediatric Resus training to be organised by a registered children's nurse. Would an RTO with appropriate skills suffice? Could Resus training for anaesthetists and dental practitioners not be organised cf. that for other anaesthetists i.e. scenario based? (see APA website, Education, Resus)
Recommendation 17

There are excellent additional references on CP and the dental team which might be usefully included. These might be worth including. See enclosed and www.cpdt.org.uk (Child Protection and the dental team).

References are generally thorough. However some of the (anaesthetic) references might also be usefully updated in final draft e.g. GPAS and Curriculum. There may be others.
IV. AGREE CHECKLIST

1. The overall objective(s) of the guideline should be specifically described. ☑
2. The clinical question(s) covered by the guideline should be specifically described. ☑
3. The patients to whom the guideline is meant to apply should be specifically described. ☑
4. The guideline development group should include individuals from all the relevant professional groups. ☑
5. The patients’ views and preferences should be sought. ☑
6. The target users of the guideline should be clearly defined. ☑
7. The guideline should be piloted among end users. ☐
8. Systematic methods should be used to search for evidence. ☑
9. The criteria for selecting the evidence should be clearly described. ☑
10. The methods used for formulating the recommendations should be clearly described. ☑
11. The health benefits, side effects and risks should be considered in formulating the recommendations. ☑
12. There should be an explicit link between the recommendations and the supporting evidence. ☑
13. The guideline should be externally reviewed by experts prior to publication. ☑ (see Appendix III)
14. A procedure for updating the guideline should be provided. ☑
15. The recommendations should be specific and unambiguous. ☑
16. The different options for diagnosis and/or treatment of the condition should be clearly presented. ☑
17. Key recommendations should be easily identifiable. ☑
18. The guideline should be supported with tools for application. ☑
19. The potential organisational barriers in applying the recommendations should be discussed.

20. The potential cost implications of applying the recommendations should be considered.

21. The guideline should present key review criteria for monitoring and audit purposes. (See Appendix V)

22. The guideline should be editorially independent from the funding body.

23. Conflicts of interest of guideline development members should be recorded. (See Appendix IX)
Audit markers

- See Audit Recipe Book, Royal College of Anaesthetists Sections 5, 9 & 13. [www.rcoa.ac.uk](http://www.rcoa.ac.uk)
- Number of repeat general anaesthetics in the same child for dental extractions
- Adverse events related to choice of airway management (nasal mask, laryngeal mask airway)
- Proportion of children managed with and without venous access, frequency of adverse events / critical incidents and rate of intervention
- Compliance with recommended care pathway

Research ideas

- Analgesia: new formulations of paracetamol and diclofenac; comparison of pre-operative analgesia with intraoperative analgesia
- Premedication: comparison of midazolam with clonidine; role of local anaesthesia in avoiding general anaesthesia for extractions of small numbers of deciduous teeth

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VI. USEFUL DOCUMENTATION

- Useful documentation can be downloaded from the Patient Information Homepage of the Royal College of Anaesthetists Website [http://www.rcoa.ac.uk/index.asp?PageID=69](http://www.rcoa.ac.uk/index.asp?PageID=69)

(This website has leaflets for parents about anaesthesia for children, risks associated with having an anaesthetic and a variety of leaflets for children and young people including those with cognitive impairment)
VII. USEFUL WEBSITE LINKS

- Action for Sick Children (Scotland)  www.ascscotland.org.uk
- Association of Paediatric Anaesthetists of Great Britain and Ireland  www.apagbi.org.uk
- Association of Dental Anaesthetists  www.dentalanaesthesia.org.uk
- Association of Anaesthetists of Great Britain and Ireland  www.aagbi.org
- British Society of Paediatric Dentistry  www.bspd.co.uk
- Royal College of Anaesthetists  www.rcoa.ac.uk
- Royal College of Nursing  www.rcn.org.uk
- Society for the Advancement of Anaesthesia in Dentistry  www.saad.org.uk
- Treatment details for children are available via the following websites:
  - www.dentalhealth.org.uk
  - www.scottishdental.org
  - www.child-smile.org
- An example of useful referral advice is available from the Central Manchester University Hospital http://www.cmft.nhs.uk/dental/referral-information-for-dental-practitioners/child-dental-health.aspx
VIII. RELEVANT ARTICLES PUBLISHED AFTER THE END OF THE LITERATURE SEARCH PERIOD AND NOT FORMALLY ASSESSED BY THE GUIDELINE DEVELOPMENT GROUP


10. Needleman HL. Local anesthesia during dental rehabs, "To use, or not to use: that (still) is the question.". *Pediatric Dentistry* 2010; 32: 7.


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IX. CONFLICT OF INTEREST DECLARATIONS (available on request from apagbiadministration@aagbi.org)