

## Response to Prof Moppett's External Review of the National Audit Projects 3&4.

TM Cook, MPW Grocott.

We thank Professor Iain Moppett for his thorough review of these projects and believe the Royal College of Anaesthetists (RCOA) has formally thanked him.

### *Opening comment and acknowledgement*

The National Audit Projects (NAPs) are now embedded in the UK anaesthetic landscape. They remain popular, with high levels of engagement throughout the five countries they now operate in. They produce highly cited academic papers that are likely to continue to be attractive to journals. The main reports are widely read and downloaded, nationally and internationally.

Between NAP3 and NAP5 the NAPs have significantly increased in size, reach, cost and duration. NAP3 received 83 submitted reports, NAP4 280 and NAP5 >400. NAP3 produced 2 academic papers, NAP4 3 and NAP5 is likely to produce 5-7. NAP5 has expanded into Ireland and was performed in partnership with the Association of Anaesthetists (AAGBI). The cycle of a NAP is now approximately 3½ years, approximately 9-12 months longer than before NAP4. This is in-part because of factors described above and in part because of greater institutional involvement and oversight. The NAPs have grown without being subject to formal external review and as NAP5 comes to a close and NAP6 is in the planning phase this review is very welcome.

The NAPs are the product of thousands of hours of work by anaesthetists and others across the country. This response provides an opportunity to thank all contributors. We thank all anaesthetists embracing the projects for their generosity in reporting events that may have profound effects on them personally. We also thank Local Reporters and Local Co-ordinators (LCs), without whom the projects simply would not work. We thank the members of the steering and review panels whose analyses and syntheses have made the source reports into coherent documents and other learning materials. We thank those at the College (and other organisations) involved in planning, prosecution and publication of the projects. Finally particular thanks to the project administrators at the RCOA, especially Ms Shirani Nadarajah (NAP3 & NAP4) and Miss Maddy Humphrey (NAP5 & NAP6), who have provided the essential administrative know-how and organisation to the projects and worked far beyond what might be expected of them. Oversight of the operational conduct of the NAPs, including the topic selection process, is provided by the National Institute of Academic Anaesthesia (NIAA) Health Services Research Centre (HSRC). Day-to-day management of each NAP is provided by a dedicated steering committee chaired by the NAP lead.

This response addresses Prof Moppett's executive summary and recommendations commenting first on areas of broad agreement and secondly addressing areas where more explanation or discussion is needed. Additional recommendations by the authors are included.

### **Section 1: Areas of agreement – point-by-point response**

- *Importance and international reach*

We agree that the NAPs are internationally important reports with the potential significant impact on patient outcome and experience during and after anaesthesia and surgery. Perhaps uniquely NAPs 3-5 have had active involvement of all UK hospitals. NAP5 was reported in news outlets in >50 countries, NAP4 in >30 countries. NAP5 baseline paper was reported on >100 news websites. NAP3, NAP4 and baseline NAP5 all reported on BBC health pages. The NAP3 was the most cited *British Journal of Anaesthesia* (BJA) paper of 2010 and the NAP4 Anaesthesia paper was the most cited BJA paper of 2011 and 2012. NAP3 is the 5<sup>th</sup> most cited BJA paper of all time and NAP4 Anaesthesia is the 7<sup>th</sup>. NAP3 >25,000 downloads in first year >50 countries, NAP4 >50,000 downloads in >30 countries in first 4 months. Currently NAP3 webpage approx. 600 'hits' per month, NAP4 approximately 1000 per month (Google analytics March 2014).

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The NAP4 report was a finalist in the Anaesthesia category of the *BMA Book awards*. *The reviewer comments included* 'I cannot think of a more influential anaesthetic text in the last few years', 'of unique and vital importance', 'every anaesthetist should read it.'

The NAPs have an international profile. The NAP4 report has been downloaded in >50 countries. NAP4 has been presented >100 times and in 17 countries. This dissemination currently relies on lecturers' good will and sometimes their own money. The projects would benefit from a strategy for international dissemination and this may have modest funding implications.

There has been interest from Singapore, Netherlands and Canada in performing similar or repeat studies.

NAPs have driven changes in practice. A national survey one year after publication of NAP3 indicated that 50% of hospitals and 70% of individuals had changed information given to patients and 25-50% had also changed central neuraxial block (CNB) practices. NAP4's recommendations on capnography were either endorsed or led to revision of guidelines or new guidelines from RCoA, AAGBI, Intensive Care Society (ICS), and the European Board of Anaesthesia. As recommended in NAP4, Departmental Airway Leads are now established in the UK with >80% hospitals having someone in such a post. A 'post-NAP4 survey' (as yet unpublished) indicates that NAP4 has led to widespread changes in practice in airway management in anaesthesia, emergency departments and particularly in ICUs. More than 20% of all DAS abstracts at the DAS Annual congress 2012 were directly related to NAP4 and >50% cited the project. Despite NAP5 having not yet reported there has been a notable increase in publications on awareness in the UK anaesthetic literature since it started (e.g. *Anaesthesia* Editorials). This implies an effect on (at least academic) attitudes even before completion and publication.

- *Relevance to patients, anaesthetists and the wider health service.*

The process of adopting topics for NAPs has been iteratively improved. NAP3 and NAP4 arose empirically. For NAP5 and NAP6 there were open calls for proposals and structured review processes to select topics. For NAP5 there were 43 proposals and 20 topics and for NAP6 90 proposals, covering 33 topics including proposals from Canada, New Zealand and Australia.

Topic selection involves a serial reviews by members of the HSRC Executive Management Board and decisions are put to College Council for ratification. Long and short listing uses a structured evaluation form and discussion of all proposals. For NAP6, after long and short listing the final two proposals were separated by face-to-face interview. Selection of a topic takes approx. 6-8 months.

- *Value for money for the RCoA and profession.*

NAP3 had visible costs of <£50K, NAP4 ≈£80K and NAP5 =£181K. All have involved all UK hospitals. NAP3 and 4 have led to changes in practice in at least half of UK hospitals. All have led to highly successful academic outputs, high profile positive publicity for the RCoA and the profession and international impact. NAP4 led to changes in international guidelines on the use of capnography in the critically ill. Increasing costs reflect improved governance, increased size and duration of the project, increased institutional oversight and of course inflation. To date, dissemination and follow-up projects have been incompletely or un-funded.

- *Maintaining at least the degree of engagement of NAP3 and 4 for future projects. (All four Chief Medical Officers of the UK; The relevant specialist societies; The Medical Protection Organisations; National Patient Safety Agency (NPSA) /Commissioning Board or equivalent; 100% of relevant NHS trusts)*

This is the intention: however as the last NAPs have achieved 100% success in this regard, this is the best that can be achieved. Future success will rely on (i) well selected topics, (ii) a high quality clinical lead, (iii) high quality oversight of projects (iv) robust NAP processes and administrative support at the RCoA (v) timely and relevant dissemination of project findings (vi) active support of LCs.

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- *National strategy for maintaining individual LC engagement and Trust support*

This remains a substantial challenge. NAPs 3-5 have been 100% successful in engaging with Local Reporter/co-ordinators. This has been achieved through building relationships, good communication and trying not to overload with work or information. However much of the success has been as a result of the efforts of the volunteer anaesthetists who have filled these posts. The RCoA needs to support these individuals as best it can to maintain the success of the NAPs. It is useful to remember that the NAPs are in essence 'bottom-up' projects and any efforts to exert 'top-down' control may be counter-productive.

Methods to formally recognise or reward the efforts of NAP LCs could usefully be further explored by the RCoA.

- *Process, data collection and analysis.*

The NAP process has used a similar model throughout NAP3-NAP5 but has been refined and improved for each project. Central to the process are a network of local reporters/co-ordinators and the 'NAP firewall' that ensures that no case that is reviewed can be identified by patient, hospital, or clinician. This provides the necessary security and anonymity that those reporting cases should expect. For NAP5, the adoption of 'UKOSS system' (i.e. requiring Local Co-ordinators to confirm each month whether their hospital has or has not received a relevant report) has much improved validity of registry numbers (numerators) but has also increased the logistical workload for the Local Co-ordinators and NAP5 co-ordinator considerably.

- *Maintaining complete separation between details of the reporters and the NAP administrative and review teams.*

Agreed.

- *Development of more formal recommendation / guidelines development akin to the practice advisories from the US or AAGBI glossies.*

Agreed. All methods for improving dissemination of project findings should be carefully considered. This should actively include proven methods of disseminating guidelines and practice standards and novel (e.g. new technology) methods.

- *Planning and costing dissemination from the start of the project.*

We agree that the process should be an integral part of the project from the start. The NAP3 project included no plans for dissemination and it was 'launched' as one 25 minute talk in a safety meeting. However dissemination included making the report available to download, a PowerPoint presentation distributed to all departments, approximately >20 lectures by panel members and production of the first college iPhone app: 25,000 downloads. NAP4 had two launch days, 20 power-points, podcasts/videocasts in two formats. There have been >100 lectures in >20 countries by panel members. Report downloaded by >50,000.

NAP5 has a publication and press committee and has benefited from liaison between the RCoA and AAGBI who have very different approaches to publicity. There has been increased professional interest and requests for talks and public (media) interest even sat interim reports. Professional and launches are planned at Royal Society of Medicine.

There are some conflicts of interest in this process (e.g. journal Editors-in-Chief) and while there is considerable value from the input of these experienced individuals this may hinder dissemination in higher impact journals. Establishing a publication strategy at the start of the project may be a solution to this.

Dissemination through lectures is effective method but is a significant commitment that remains unfunded. RCoA should address this.

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- *Plans to measure the penetration and impact of the projects should be included at the planning stage of future NAPs.*

Agreed: this has been done for NAP3 and NAP4 but was neither planned nor funded.

- *Repeating / closing the loop of NAPs 3 & 4.*

To date the NAPs (despite their name) are not audits as they have no standard or benchmark to measure against. They are a combination of in-depth service evaluation and observational health service research. NAP3 and NAP4 have been followed by national surveys to determine impact and change of practice.

A more thorough way to do this would be to repeat, or partially repeat, the projects. This might be focussed particularly on those areas identified in the first projects as most in 'need of change'. Alternatives are surveys of institutional and individual practices and the degree to which recommendations are either implemented (institutions) or adhered to (individuals).

- *Clear separation of choice of topic and the partner organisations that help deliver the projects.*

This is in place, as specialist societies (since NAP5) have no role in selecting the topic of NAPs as this is performed by HSRC board. However the availability of specialist society support (including financial support) is one factor considered in deciding whether a topic should be adopted. As an example, despite numerous proposals for complications of peripheral nerve block complications to be the subject of NAP5 and NAP6, it was not a strong contender because RA-UK was not involved in any proposals.

- *Consideration of formal sub-studies.*

This was not done in NAP3 and NAP4 but has been explored in NAP5 which has included

- Baseline survey of AAGA known to anaesthetists UK
- Baseline survey of AAGA known to anaesthetists Ireland
- Anaesthesia activity study to support NAP5 denominator in Ireland
- Anaesthesia activity study to support NAP5 denominator in UK
- Brice day planned as 'validation' (part of SNAP1)
- Longitudinal follow-up study by psychologists to study psychological impact of AAGA in patients reporting to NAP5 (in preparation)

This has increased the breadth of NAP5. However, it has also increased its length, costs and the workload on local reporters/co-ordinators, some of whom have expressed dissatisfaction with this. Additional sub-studies add cost and funding may be sought through national grant applications aided by RCoA infrastructure support. The pros and cons of each approach are worth considering further.

NAPs have also previously recommended areas for research by others, contributing to the research agenda. More than a fifth of abstracts at DAS 2012 were directly related to NAP4's findings and recommendations. NAP5 will have 'recommendations for research'. These may guide others to do relevant research outside the NAP umbrella: a research legacy.

- *Improve its focus and presentation of website.*

Fair – and in general for HSRC. We are working on this.

- *Succession planning for the time when the current NAP advisor demits his official and unofficial roles*

Agreed and addressed in Prof Grocott's recommendation for an overall NAP Programme Lead, distinct from the leadership of individual NAPs.

- *Exporting the NAP 'brand' to other countries.*

This has already happened to some extent, but is beyond our control. NAP5 includes full participation of Ireland. There have been several approaches from counties with a 'national health service' regarding mimicking NAPs. (e.g. Singapore, Canada, Netherlands). This has led to discussions and advice but as yet no additional projects.

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## Section 2: Areas of discussion

- *Clarity over the purpose of the projects.*

We believe the purpose of the projects is clear and agree with Prof Moppett's 'implicit purposes'. However to be explicit the purpose is laid out here

"The NAPs are prospective case series of rare events relevant to anaesthesia that are not practical for study by cohort or randomised controlled studies.

The topics studied focus on rare events that are potentially serious for patients, of importance to clinicians, and where the event prevalence and incidence is incompletely defined, but are infrequent enough that only a national approach will provide sufficient information. The projects use mixed methods (national census and national registry) to identify denominators and numerators – and from these estimate incidences for such events. In addition qualitative data is of great value in the NAPs.

The *primary aim* of the NAPs is to improve knowledge about rare and clinically important complications of anaesthesia, ICU or pain medicine care and thereafter to a) recommend b) disseminate and c) implement changes in practice that improve the reliability and safety of care delivery for patients.

*Secondary benefits* of the NAPs include: i) embedding quality improvement within anaesthetic departmental practice ii) working with other organisations in multi-sub-specialty, multi-specialty and interdisciplinary collaborations iii) raising awareness of anaesthesia, pain and critical care in local hospitals, trusts and trust boards, the wider medical community, the media and amongst other national bodies."

- *A (formal) appointments process for the review panels.*

We consider it a strength that NAP partners nominate their own representatives to NAP review and steering panels. This avoids the criticism that the panel is selected by the RCoA or NAP leads to produce a certain outcome. However there are also some invited panel members (experts, lay persons, trainees) and these positions could be open to a formal selection process. This will add workload and possibly cost to the project.

- *Consider the use of good outcome controls, or review of sampled 'rescued' bad outcomes to provide some reference points.*

The NAP projects focus on cases where adverse events have occurred during anaesthesia. It is not disputed that there exist cases similar to those reported to NAPs but with favourable outcomes. However selecting a similar and representative comparator group would be difficult (due to the rarity of events) and the added value would therefore be limited. Such efforts would increase the size of the project adding to costs.

- *Suggestion of parallel process for producing recommendations for practice.*

We disagree with this recommendation which implies that NAP recommendations should be separated from the report itself. First this is contrary to the successful approach adopted to date. We consider the generation of recommendations for practice to be integral to the process of case review and synthesis of evaluations that currently forms the core of NAP activity.

NAP recommendations are all based on cases and findings within the project rather than being based on a review of external evidence. They do not constitute a full overview of practice recommendations on a topic but rather are a response to the review panel's analysis of the cases reported to each NAP. As such they are a low grade of evidence but intrinsically bound up with the project itself. This is a process very similar to Confidential Enquiry into Maternal and Child Health, National Confidential Enquiry into Perioperative Outcomes and Death etc.

NAP5 will, for the first time, include both 'implications for research' and 'recommendations for practice'.

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Other organisations may choose to make recommendations based on a broader review of evidence, including that presented in the NAP reports.

- *Consideration to providing explicit evidentiary tables for basis of the expert opinions.*

Like other case review based projects the NAPs deal in expert opinion (clinical review, case discussion and consensus agreement). Considerable effort is made in the NAPs to ensure that recommendations are based on evidence acquired during the project and that it is consistent with robust external evidence where this exists. There are other methodologies for determining higher quality evidence but with little overlap with NAP process.

- *Inclusion of independent practice.*

All agree that this is a laudable aim. Ultimately the decision will need to be made by RCoA Council based on overall College strategic aims.

There are several benefits and hurdles that we list here

#### Benefits

- The strongest argument for inclusion is the increase in NHS work being delivered within independent (Non-NHS) providers and the blurring between the NHS-independent sectors. Of note NAP5 included Independent sector data collection in its Irish Activity Survey.

#### Hurdles

- The lack of anaesthetic departmental structure in independent hospitals means governance structures differ and data collection will likely be challenging.
- Difficulty in identifying skilled clinical leads (a skilled lead is required to capture and filter cases reported to NAPs)
- The potentially negative effect of competition between hospitals/ organisations might impact data capture and accuracy.
- Different case-mixes between the two sectors raises the possible of inappropriate and misleading comparisons between sectors
- With ≈300 independent hospitals in the UK their inclusion would involve considerably increased logistical workload and cost. This might impact on the job description of a NAP clinical lead and the ability to do the job outside a fulltime appointment. Funding from independent sector providers or industry bodies may address this challenge.
- There is evidence that all NHS anaesthetists already aware of NAPs and it is likely that they already have impact on quality of patient in the independent sector. The additional impact of inclusion of the independent sector would be uncertain.
- NAPs already accept cases from outside the NHS for purposes of learning (qualitative analysis).
- There is an argument that as independent sector activity accounts for only ≈10-12% of activity, it is unlikely to alter results or conclusions of NAPs.

None of these are insuperable but they do raise the prospect of a considerable increase in workload and costs to generate (at worst) a modest amount of data which may not enhance NAP findings. Cost increases would likely be considerable.

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### Section 3: Additional recommendations

- *The main thrust of the recommendations is around improving dissemination and implementation. The whole section in Moppett's report should be carefully considered.*
- *The role and make-up of the planning and publications committee should be reviewed*
- *Other methods of dissemination should be actively considered -both to the public, media and profession.*

This likely requires engagement with an up-to-date publicity specialist. External expertise with specific knowledge of new media should be consulted.

- *The authors should consider publishing a review or editorial to publicise Prof Moppett's report and this response.*

In preparation

- *Non-scientific dissemination is a key recommendation and the Patient and Public Involvement Group at the RCoA would be ideally positioned to contribute to this and also to selection of future topics for NAPs.*
- *With the likelihood of further enquiries for data sharing (which it would be good to support) it is important to establish ownership of data and whether there are secure methods to enable this.*

The HSRC has undertaken a small survey of LCs to explore whether this would have an impact on individual and organisation engagement with future projects. Overall most of approximately 100 responses were neutral: of the remainder the majority view was that it would hinder institutional and individual engagement.

- *The HSRC should survey opinions of LCs to capture their experiences of performing this role and how it might be improved.*

In progress.

### Findings and recommended actions

1. Current methods of selecting NAP topics are fit-for-purpose. Selection of future topics needs to continue to focus on relevance for patients and the profession.
  2. The general structure and format of the NAPs should be retained with particular emphasis on maintaining the 'firewall' separating individuals reporting cases from administrators and those reviewing cases.
  3. The NAPs should continue to aim for 100% involvement of UK NHS hospitals in future projects and also engagement with all four Chief Medical Officers of the UK, relevant specialist societies, medical defence organisations and the commissioning board or equivalent.
  4. The planned phases of each NAP should be defined and agreed before the NAP starts.
  5. Consideration should be given to including some steering/review panel appointments by open competition.
  6. The NAP leadership should engage with LCs and seek their views on the role. The RCoA should actively support the LC post and explore how it can be further formally recognised or rewarded.
  7. Consider more formal recommendations / practice guidelines as an output of NAPs
  8. Dissemination of project findings should be carefully reviewed and should include
    - a. Defining dissemination plans in early project planning
    - b. Budgeting for and appropriately funding dissemination
    - c. Professional and public launches as appropriate
    - d. Consideration of use of social media and new media in dissemination
  9. Plans to measure the penetration and impact of the projects should be included at the planning stage of future NAPs. This likely includes baseline and follow-up surveys identifying the impact of NAPs on
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institutional and individual practices. Consideration of repeating NAPs at suitable intervals should also be included in this strategy.

10. The role and make-up of the publication and press committee should be reviewed. It should be explicit in its remit that it should neither define nor constrain where NAP outputs should be published.
11. The websites where NAP information is held (RCoA and HSRC) should be maintained to be up to date and should contain similar access to NAP outputs.
12. The general processes and achievements of the NAPs might be highlighted by means of a review or editorial.
13. Efforts should be made to share NAP methods with other national organisations to enable and encourage similar projects to be undertaken elsewhere.
14. The inclusion of data from the independent sector should be actively explored, in a manner consistent with wider RCoA and HSRC/NIAA strategies.
15. Data sharing should be supported in a manner consistent with wider RCoA and HSRC/NIAA strategies and consistent with the overall goals of the NAP program. This will need to be managed carefully to ensure such sharing initiatives neither risk de-anonymising data nor impact on the enthusiasm of organisations and individuals to report to NAPs.
16. A post of Director of National Audit Project Programme should be created. We recommend appointed to by competitive interview, review at 3 years and competitive reappointment at 6 years.

Tim Cook

Mike Grocott

20 May 2014.

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