Anaesthesia 2020

A Report on how to provide Sufficient Anaesthesia Resources in New Zealand for the Next Decade and Beyond

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By The New Zealand ANAESTHESIA RESOURCE REVIEW GROUP (AARG)

An undertaking by the New Zealand Society of Anaesthetists (NZSA), with representation from the NZ National Committee of the Australian and New Zealand College of Anaesthetists (NZNC ANZCA)
In cooperation with Health Workforce NZ
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Summary of process and key findings

The Anaesthesia sector of New Zealand’s health workforce comprises some 535 vocationally registered specialists, 155 vocational trainees (Medical Council of NZ data 2009), medical officers of special scale and GP anaesthetists; and is supported by a delegated workforce of some 650 qualified anaesthetic technicians and registered nurses. Anaesthetists work as service providers to all the surgical specialties and to midwives. They are involved in patient care from initial pre-operative assessment of the patient through to post-operative care and pain management; are involved in retrieval and trauma and emergency resuscitation work, alongside core anaesthesia services and airways management within the operating room. Anaesthetists are pharmacology specialists, train for some 13-15 years to qualify and are in strong demand internationally. They work closely with all medical and surgical specialties, lead maternity carers (LMC), pharmacists and nursing staff to optimise patient safety be it in day stay facilities, secondary or tertiary facilities.

Anaesthesia is focused on maximising positive outcomes for the patient underpinned by a strong evidence base in science and advanced clinical skills. This approach has informed the work of the Review Group through a process of survey work and evaluation of a range of options looking to sustain the anaesthesia workforce into the 21st century and beyond.

Health Workforce NZ (HWNZ) early in its strategic planning focused its interest on the anaesthetic workforce as a sector at risk of supply shortages, in demand internationally with higher remuneration rates on offer overseas. HWNZ regarded it as a workforce requiring high levels of technical expertise that could look to delegated models of care already under trial or being explored as options in other jurisdictions, albeit with mixed rates of success.

On this basis the NZ Society of Anaesthetists (NZSA) determined the need to actively engage with HWNZ to undertake a resource review in Anaesthesia. This activity is underpinned by a Memorandum of Understanding (MOU) that was agreed between NZSA and HWNZ in July 2010. Since that time, the Anaesthesia Resource Review Group (ARRG) has broadened its remit to include representation from the NZNC of ANZCA and from amongst the Vocational Trainees in Anaesthesia. The intent has been to create an entity that can both serve the community by promoting safe and high quality care, and interact with and advocate on behalf of the entire medical anaesthesia workforce of New Zealand.

In essence, the review represents a major step forward as a profession led investigation and response to the issues facing the current workforce and those in training. This provides a unique perspective and one that affords more engagement and invites proactive discussion of the necessary changes with senior medical doctors and those in training, rather than a reactive defensive position as witnessed by the judicial review processes initiated by NZSA in 2004.
What are the issues the anaesthesia workforce is facing?

The primary stimulus has been aptly described by HWNZ as the “100/40” problem – an anticipated 100% increase in healthcare demand in the next decade, with a projected increase in healthcare funding of no more than 40%. The exact numbers may be disputable, however the principle remains. The brief of the ARRG has been to:

“…to study, plan, implement and evaluate sustainable health workforce systems specifically for the anaesthesia workforce of New Zealand.”

Please note: this review explores only public hospital service provision. While the majority of anaesthetists work in both public and private practice in various employment arrangements, because HWNZ’s remit is vocational training within the public sector, the ARRG determined a consistent sphere of interest to be the most useful. Having said that, the relationship between the private and public sectors within NZ is highly interconnected, in part because of the relationship with our national monopolistic insurer ACC, and because specialist anaesthetists, at least in part, cross-subsidise their public sector income from private work. ACC only funds anaesthesia services at registered specialist level, in marked contrast to publicly delivered services. This limits options for devolution and delegation of duties as promulgated by HWNZ, and limits IMGs from entering the private practice market for up to 3 years until such time as they are no longer required to meet MCNZ supervision obligations.

There are over 140 operating theatres in the private sector in addition to day stay facilities responsible for delivering significant volumes of elective procedures and utilising specialist only anaesthesia services to the public.

The ARRG has undertaken the following activities in order to gain the expertise and information needed to provide this final report:

• Background research into anaesthetic manpower and service delivery models in a number of other OECD countries, including the advantages and disadvantages of each system and in particular the complexities of comparable systems.

• A survey of the current and projected status of all public hospital anaesthetic departments in NZ concerning their ability to perform more work.

• A survey of anaesthetic vocational trainees on attitudes to alternative or new anaesthetic manpower models.

• Numerous meetings and much dialogue between the members of the ARRG to clarify the issues involved and particularly the solutions to the 100/40 problem.

• “Roadshow” presentations to all anaesthetic departments in NZ to outline the issues and to gain feedback on potential solutions to the 100/40 problem.
All parties involved in this review know that this is the start of a process which will need re-evaluation over the years ahead, and changes to the plans and projections. Such factors as the significant projected increase in Australian medical graduates, which in turn may lead to reduced migration of NZ staff to Australia, as well as a potential influx of well-trained SMOs from a downsizing National Health Service (NHS) in the UK, will impact the status of any manpower problem in this country and necessitate a re-evaluation of possible solutions.

The key findings of this review are:

1. The New Zealand Anaesthesia workforce is not in crisis but is currently severely stressed in some regions. It is likely to come under more stress as demand for anaesthetic resources increases over the next decade with a risk of service failure unless specific measures are taken to address this demand.

2. There are two separate issues regarding anaesthesia resource to consider. One is the potential difficulty in supplying anaesthesia and operating room (OR) resources to meet the increased demand for elective surgery and other procedures (which has been noted by HWNZ and many others). The other quite different issue is the potential difficulty in supplying sufficient anaesthesia resource to cover acute/urgent surgery (i.e. having adequate staff to maintain a good/safe on-call roster), which until now has received only limited examination. Recent recommendations to DHBs to increase permanent on-call anaesthetists in secondary obstetric units is in response to under-staffing and quality and safety issues. We have to be mindful of ‘not robbing Peter to pay Paul’ by ensuring sufficient resource is available in OR in all high demand acute areas.

3. To date the 100/40 problem has been phrased generally as a mismatch of anaesthetic manpower resources vis a vis increased demand over the next 10 years. In our view this is inaccurate. In actuality it is a projected mismatch of delivery of OR outputs versus demand. This concept leads directly to the ARRG view that although measures to increase the anaesthesia workforce are relevant and important to discuss, so too are measures to increase delivery of OR output which do not rely on any increase in manpower. The National Health Board needs to consider the broader strategies identified in this paper that effectively improve productivity within existing human resource capability.

The ARRG identified many current on-going systemic issues which significantly impede delivery of anaesthesia services now and will impede the implementation of any future measures taken to cope with potential shortages of anaesthesia resource, unless these systemic issues are addressed in a comprehensive way. If a nationally agreed approach to implement some of these changes can be realised then this will go a long way towards helping to solve the 100/40 problem.

4. Maintenance and retention of “the status quo”, in terms of the high quality anaesthesia workforce we have at present cannot be underestimated or placed at risk. It is an irreplaceable foundation on which to add other initiatives to meet the demand for more anaesthesia services. De-stabilization or disengagement
of the current workforce is not sensible and must be guarded against. At the
time evolutionary change is enabled, risk mitigation to the existing
specialist workforce must be considered to maintain surety of supply and
stability in the public provision of surgical services.

5. The two most significant causes of inadequate SMO manpower in the
anaesthesia workforce are maldistribution and mal-retention. Australia is
currently our single biggest threat due to the huge salary disparities that exist.
The somewhat intractable 35% salary gap that exists between the two
countries in some sectors results in a steady loss of our most experienced
senior doctors (Statistics NZ 2010). Resting on our laurels of lifestyle and
scenery is insufficient of itself to arrest this attractive proposition.

6. With respect to alternative providers of anaesthesia care, the use of allied
health professionals to act as physician extenders in anaesthesia is
controversial. Any such proposal may have merit provided it is cost effective,
and will provide achievable clinical gains without any decrease in quality of care
or any disengagement of the current anaesthesia SMOs, and it is embedded in
a doctor led model.

7. As part of a solution mix which will include better retention and distribution of
SMOs, much improved OR service delivery, and potential use of physician
extenders, it would be very appropriate to examine and give some direction at a
national level to retaining and capitalising on the potential workforce of
anaesthesia SMOs who are older than 65. Many of these senior doctors remain
clinically competent, are fit to practice and want to work in some capacity, be it
part-time or less onerous clinical roles with reduced on-call duties.

8. There is significant potential to create opportunities for those senior SMOs who
no longer have young families at home, to travel to other parts of New Zealand
for work opportunities, either on a casual or semi-regular basis. The current
DHB system works against this redeployment of personnel too hard to staff
areas. Industrial limitations on migration across DHB boundaries have the
effect of limiting staff movements to areas of need or shortage. Currently this
represents an underutilised or neglected option worthy of further exploration
and could go some way to solving this problem.
1. **The problem outlined in more detail**

The challenge facing global healthcare is a result of a number of trends colliding simultaneously. The trends of increasing life expectancy and increasing spend on healthcare over and above the increase in incomes are long established and have been present for many years. This phenomenon as seen in New Zealand is demonstrated in Chart 1 below.

**Chart 1. New Zealand Cumulative Change in Health Spend versus Gross Domestic Product since 1950 – inflation adjusted**

![Chart 1](chart1.png)

It is appropriate to ask whether this increase in expenditure has been effective in increasing the health of New Zealanders, and how New Zealand compares with other countries in ‘value for money’ in the spending on health. One internationally used measure of the effectiveness of health care is the life expectancy of the population. Over the time that the cost of health care has risen relative to GDP in New Zealand, life expectancy has also risen (chart 2). Comparing the ratio of life expectancy to health care spend per capita in New Zealand with that in other countries, New Zealand is in the mid-range (Chart 3). Of note, the worst performing country by far is the United States of America. However, the increasing rise in health care expenditure does pose a challenge for economic resources available in New Zealand, and will need potentially difficult decisions at both a political and economic level to be taken.
There are two major factors which are important in confronting the demographic challenges of healthcare planning. They are the well described surge in births that
occurred from 1945 – 1964 otherwise known as the baby boomers, but also the lesser appreciated fall in fertility rates that are occurring around the world at present. There are now 62 countries that have a fertility rate of less than the replacement level of 2.1 children per couple\(^5\). These 62 countries account for 45% of the world’s population and it is expected that many of these countries will experience decreases in rate of population growth along with major imbalances in gender. Japan has already started its journey down this path. China is also expected to follow with a reduction expected from a 2.6 to a 2.1 fertility rate due to the one child policy in place. It should be noted that New Zealand has a fertility rate of 2.1 as of 2008 (Chart 4)\(^6\) as compared to other countries. This is a positive for New Zealand and suggests we may be less likely to experience the degree of shortages which will afflict other countries like Germany with a birth-rate of 1.3 children per couple currently.


These other countries will experience a shortage of workers and, more importantly, a burgeoning middle class and taxpayers to fund government spending, may attempt to attract our healthcare workers away in the years ahead. There will also be situations where changes in foreign government policy may exacerbate this situation. The predicted shortage of doctors created by the Obama healthcare reforms of 2010 has been calculated at 150,000\(^7\) doctors and that figure does not include the shortfalls for other healthcare professionals. Increased demand for healthcare personnel in the United States will lead to an exacerbation of existing problems for New Zealand as we are already heavily reliant on medical immigration to meet demand.

2. **The role of an anaesthetist in more detail**

Anaesthetists do a lot more than the administration of anaesthesia for surgery. It is a generalist specialty that plays important roles at many levels to facilitate the functioning of national health services. We work with many other health professionals in our day to day work including midwives, physicians, general practitioners, surgeons, anaesthetic technicians, emergency department (ED)
doctors and nurses to name just a few. Anaesthetists are extensively involved in the following areas of patient care in addition to anaesthesia for surgical procedures:

i) The assessment, care and management of patients both pre- and post-surgery to ensure optimal patient outcomes i.e. perioperative medicine.

ii) The staffing and running of Intensive Care (ICU) and High Dependency Units (HDU) to look after our critically ill hospital patients.

iii) The coordination and smooth running of theatre suites.

iv) The extensive involvement in the management of acute and chronic pain patients in an inpatient and outpatient capacity.

v) Anaesthetists are often consulted regarding placement of intravenous access in patients who require on-going intravenous treatment (e.g. chemotherapy and long term antimicrobial therapy).

vi) The transport of sick patients between hospitals of the sickest patients that require a doctor present during transport (Anaesthetists/Intensive care doctors are the acknowledged experts in airway and cardiovascular management).

vii) The resuscitation of patients with acute cardiovascular or airway emergencies that are life threatening in nature (same reason as for (vi).

viii) The provision of acute obstetric analgesia and emergency cover for women in childbirth.

3. The process undertaken by the Anaesthesia Resource Review Group (ARRG) including HoD and trainee survey and roadshow findings

The initial phase of information gathering by the ARRG was to undertake two surveys. The first of these was an online survey inviting Heads of Anaesthesia Departments (HoDs) in all public hospitals in New Zealand to provide information on manpower issues, OR utilisation, ease and difficulty of recruitment, caseload, workload outside the OR and the significant impediments or roadblocks to delivery of OR services among others. The results are shown in Appendices A and B as tabulated data and comments from HoDs that were recorded during the survey. Pleasingly responses were obtained from all but one hospital in New Zealand.

Key findings of the survey were that:

We have adequate numbers of anaesthesia manpower to meet current demand for surgical services. However, there is a maldistribution of manpower that favours the larger centres and several smaller centres are under considerable pressure to maintain services as evidenced by chronic use of locums and/or restriction of annual
leave entitlements. Such restrictions in annual leave were reported by 33% of departments. It should be noted that several departments indicated they had experienced problematic manpower shortages in the past but had only fixed these by extremely proactive recruitment drives. Thus it is possible the magnitude of the problem is understated. There was no surprise that Australian salary levels were cited as the single biggest threat to on-going retention and recruitment initiatives. There was a general lack of confidence by many departments that they could cope with a hypothetical 50% increase in workload over a five year period.

Roadblocks to delivery of OR services were multi-factorial but poor management of annual leave entitlements of surgeons was cited by many as a problem area as were lack of anaesthetists, availability of inpatient beds, HDU/ICU beds and adequate numbers of ancillary staff.

The second survey (see Appendices C and D) was a survey of current anaesthesia trainees as to perceptions of the use of Physician Assistants in Anaesthesia (PA-A) to deliver anaesthesia. There was widespread opposition to the consideration of this initiative which was of no surprise to the AARG but even more worrying was the 45% of respondents that indicated they would either discontinue training in anaesthesia as a specialty or relocate to another more favourable jurisdiction in the event of PA-As being introduced. Many of the comments provided by trainees were highly insightful and these are recorded in Appendix D.

The major undertaking by the AARG in the consideration of the 100/40 problem was the nationwide road show that took in all areas on New Zealand. What was notable were several key themes that emerged when all the information from the road shows is taken as a whole. These are listed below.

i) Many anaesthetists emphasised just how highly they valued the direct and on-going patient care involved in anaesthesia. Any lessening of this one on one involvement would significantly reduce job satisfaction and act as a catalyst for leaving the NZ medical workforce.

ii) Many anaesthetists in NZ have worked overseas and there were many comments provided that reflected the observation that anaesthesia in many jurisdictions is provided in a less than optimal fashion. Significantly there were many comments from those who had recent work experience of the UK and US against the use of alternative anaesthesia providers.

iii) There was general agreement that some tasks performed by anaesthesia SMOs, namely venous cannulation and PICC line placement, could be safely delegated to an allied group such as anaesthetic technicians provided appropriate training and supervision was available.

iv) There was a clear rural/urban divide as to what constituted the biggest problem in anaesthesia service delivery. Anaesthetists from smaller centres typically cited maintenance of after hours SMO cover as the biggest problem while in the bigger centres, concerns were more directed to efficiency of service provision for whatever reason.
v) There was general agreement that the large number of DHBs in NZ, for a relatively small population, has led to fragmented and poorly co-ordinated manpower solutions.

vi) There was comment that the industrial environment, from human resources to MECA agreements, had led to a one size fits all approach that does not work to meet the needs of hard to staff centres.

vii) There were many comments to the effect that what was needed to solve service delivery problems was better use of existing staff in many situations rather than the creation of new layers of staffing. The use of new and more efficient means of working could go a long way to helping overcome shortfalls of service delivery e.g. use of existing ORs for extended periods.

viii) There were strong comments from the rural anaesthetic departments about the obstructive MCNZ process regarding vocational registration of overseas trained specialists. This has led to vulnerable/critical service delivery in the rural sector with heavy reliance on expensive locum cover. It was alleged that several overseas trained specialists declined vocational registration in New Zealand by MCNZ were subsequently able to gain specialist registration in Australia and were thus able to get work there.

4. Current anaesthesia workforce

The Anaesthesia workforce in New Zealand is composed of Senior Medical Officers (SMO) or consultants who have vocational registration with the Medical Council of New Zealand (MCNZ) in the specialty of Anaesthesia. In addition there are (1) trainees and (2) Medical Officers. Trainees have general medical registration with the MCNZ but practice under oversight by a nominated SMO. In some hospitals or District Health Boards (DHBs) there are Medical Officers (MO) who practise anaesthesia under obligatory remote supervision provided by an SMO colleague. The scope of duties performed by MOs varies from one individual to another. In some DHBs MOs perform after hours on call work, with long range supervision provided, but in other DHBs their duties do not include after hours on call work.

As of the 2009 MCNZ data there were 687 doctors who listed anaesthesia as their main work. Of these 535 had vocational registration and 155 were in vocational training. Forty two per cent of vocational trainees in anaesthesia are female. The average age of someone with vocational registration in anaesthesia is 45. Forty six per cent of doctors with a vocational scope of practice in Anaesthesia obtained their primary medical degree in a jurisdiction other than New Zealand and are classed as International Medical Graduates or IMGs. This compares with 41 per cent in 1980. This is in balance with general immigration numbers to NZ.

While the 2009 workforce survey report is the most recent from the MCNZ, the following figures represent the most up to date data available on the anaesthesia workforce: anaesthesia trainees 247 (ANZCA iMIS database accessed 18.2 2011) and vocationally registered anaesthetists 617 (MCNZ registration data, website
accessed 18.2.2011). There is a marked discrepancy between the MCNZ and ANZCA data for vocational trainees; whether this represents a different way of counting, or a recent increase in numbers, or both should be a subject of further study. The difference in the number of vocationally registered anaesthetists is in keeping with the different figures from the MCNZ, and reflects the different methodology used in the different counts.

Reliance on IMGs may have substantial risk. Other countries, such as India, which are currently exporters of doctors will shortly become net importers of doctors due to many factors underlying the increasing wealth and standard of living of these same developing nations.

5. The three separate serious impacts of demographic change with respect to anaesthesia resources.

i) The general population is living substantially longer than a decade ago and is requiring more expensive medical care especially in the last few years of life. This has resulted in a near universal and yet unsustainable rise in health care expenditure in terms of percentage of Gross Domestic Product (GDP) in all developed nations including NZ. HWNZ has set a challenge for the workforce service reviews of a 100% increase in demand for health care with only 30-40% increase in the healthcare spend by 2020, while the OECD has estimated a lesser figure of 4% of GDP increase in the spend on healthcare from the current level of 9% to 13% of GDP\(^9\). This would represent a 44% increase in spending on healthcare. The exact figure is less important than the widespread agreement that there WILL be a substantial increase in demand. Part of this extra health care delivery will involve anaesthesia but the increased demand will be unevenly distributed with a major component being in the aged care and disability sectors.

ii) The projections for government or private funds available to finance any increased demand for health care are only estimates. They may be optimistic given the global financial crisis most nations are coping with at present. What is not in doubt is that the number of active workers in NZ able to pay taxes (as opposed to the expanding retired population) is going to decrease as a percentage of the population. Unless substantial immigration happens, or (most unlikely) the birth rate increases markedly, there will be an inevitable and not-too-far-away end to annual increases in health care expenditures as a percentage of GDP. This feature is often described as the dependency ratio which is the number of people in the workforce (who work and pay taxes) versus the number of retired people (who do not work and are net consumers of taxes via their health care and other needs which are funded by government spending).

iii) The aging and retiring population will include medical staff, including anaesthesia specialists. They will "drop out" of the workforce at the precise time when we need more anaesthesia and medical resource.
6. The essential re-phrasing of the problem

The 100/40 problem as it was originally expressed to the ARRG in anaesthesia terms was that it heralds an urgent need to establish another source or model of anaesthesia manpower. The implication was that since an anaesthesia SMO takes more than a million dollars and more than 12-13 years to train and then usually earns a substantial income, that this model could not adjust to provide the increased health care which would be needed relatively soon. Since anaesthesia physician extenders (who are quicker to train and may be cheaper to employ) exist in many overseas models there was an understandable desire expressed by some to nominate these types of workers as the answer to NZ’s problems.

The ARRG has discovered that each country which has adopted such physician extenders has their own reasons for doing so (and some reasons do not and will never apply to NZ), and experiences a mix of both costs and benefits as a result.

The ARRG has also discovered that there are many impediments which currently result in significant restrictions of delivery of anaesthetic services in NZ. Even if the anaesthesia SMO workforce was doubled overnight these impediments would still be there and would restrict deployment of the extra anaesthetic SMOs, who would then represent a very expensive waste.

The positive view of this is important. It means that there is a great deal that can be done better with NZ’s existing OR services, without a significant increase of manpower.

Thus the “problem” needs to be re-phrased as how best to provide the extra services needed through to 2020, not restricting NZ to only using physician extenders to increase manpower.

7. Potential solutions to the problem and the expert view of the NZ anaesthetic community on the appropriateness of these solutions for NZ.

The ARRG initially was directed by HWNZ to come up with solutions as if we had a “blank sheet of paper”. In addition we were told that HWNZ would implement what we recommended. The range of potential solutions offered by the wider anaesthetic profession was large. The ARRG has considered the situation carefully, both at a local departmental framework level and also in a “whole of country” approach. There is no doubt that some solutions would need further debate and deliberation as they involve more than anaesthesia and indeed more than just health care. Rather than restrict the options we provide below we will outline them all, and will make some recommendations as to those which we regard as suitable for more immediate implementation.
Underlying some of these proposals is an intention to increase the quality of care. It is commonly forgotten that many increases in quality of care actually reduce bad and expensive medical events and thus they increase efficiency.

**Measures to retain the current Anaesthesia workforce.**

The ARRG confirmed that the current NZ SMO anaesthesia workforce is acutely aware of the financial incentives to move to and work in Australia. The ARRG also knows that the recent addition of a substantial number of new medical graduates in Australia will have a roll-on effect in producing more Australian anaesthetic SMOs, which would potentially reduce the need to recruit NZ specialists. This makes the accurate assessment of potential migration of NZ anaesthesia specialists uncertain.

Looking at the issue more broadly NZ has the highest rate of export of doctors in the developed world. This also applies to anaesthetics. It is not a case of young SMOs going overseas for training and experience, but more that a significant number of these young specialists do not return ever. It is not sensible to spend a large sum of money to train a NZ anaesthetic SMO and then to have them leave forever. NZ trained specialists know more about the wider context of NZ medicine and culture. This may present problems for an immigrant specialist. It makes sense then to try and retain the NZ trained SMO we currently have and to do this much better than we have to date.

The NZ government is often quoted as saying that they do not have enough funding to provide for substantial financial incentives for NZ SMOs to work here, when comparing NZ with Australian salaries. The ARRG does not believe this response is comprehensive enough to address the major issue. This is the prime reason for the drain on our medical workforce.

Consider that NZ anaesthetic SMO locums are currently being employed at an annual salary which can be as high as NZD$500,000. This kind of salary is very competitive with Australia and is a long way above the normal SMO salary in NZ. While locums fulfil a clinical need, they are not necessarily a good long term solution. They are certainly less likely to contribute to the needs of a department which require continuity. It would make more sense for some of the money used to employ locums to be included in the salary packages of SMOs in hard to staff areas to obtain more permanent solutions to workforce needs.

NZ anaesthetic SMOs do not have to migrate overseas to be lost to the public workforce. They can decide to work in the private sector. This may well contribute to the necessary provision of health care delivery in NZ, which is good, but it does potentially mean that these SMOs can drop out of the public workforce both for elective services and for on-call rosters.

The ARRG has informal information of the wide range of MECA compliant anaesthetic public SMO remuneration formulae that exist in NZ. It is clear that some DHBs pay more than others for the same service. This is another example that suggests that there is room to provide incentives within the current structures to try and retain NZ anaesthetic SMOs.
Further study of the pay structure that exists across New Zealand may be warranted to better understand the role this may play in order to solve localised workforce shortages. Then some mechanism could be devised to determine what flexibility is required within current or new structures to provide incentives for NZ SMOs to stay here.

Finally the ARRG recommends HWNZ work with the NZSA health workforce sub-committee to create a manpower crisis response. The reason is that in some smaller centres there is a potential for SMOs to leave and a clinical and financial/incentive response will be needed to fix this if it occurs. The ARRG survey indicated some of the smaller centres are at high risk of service delivery failure – incentives in these areas is seen as high priority to prevent further loss of SMOs in these regions.

**Measures to attract NZ vocational trainees to return to NZ after overseas experience.**

The ARRG is aware of HWNZ initiatives to identify vocational trainees who have promise to become excellent SMOs, and then to offer them financial support, along with a firm job offer when they return from overseas fellowship experience, on the understanding that THEY WILL come back to a NZ specialist position.

There are risks and benefits to such an approach. It does tend to favour NZ trainees, over and above high quality overseas trained SMOs, who are necessarily discriminated against by the process. It also tends to take the pressure off NZ recipients of such support. They do not have to make the same effort during their overseas experience, since their future job is guaranteed.

The benefit of such a scheme is obvious.....it tends to “lock in” a good trainee before they get the desire to migrate to overseas positions.

The ARRG is aware of other different incentives which have been used to attract NZ junior SMOs back from overseas. An example would be starting someone on a higher step of the SMO MECA salary range from day 1. However this runs the major risk of causing difficult working relationships within the department.

The ARRG recommends more debate within the anaesthetic community about the benefits of such incentives for anaesthesia. It may be appropriate. It is too early in our discussions to tell.

**Measures to increase the reliability of smaller centre anaesthesia staffing. Measures to improve regional cooperation between anaesthesia departments.**

Much time was spent by the ARRG in listening to the SMOs who work in smaller centres. Their reality of difficulty with staffing issues can be much more intense than for the major centres.

The smallest centres are not accredited for vocational training in anaesthesia (Gisborne, Whakatane, Thames, Hawera, Wanganui, Kaitaia, Masterton, Blenheim, Ashburton, Gore, Greymouth), and thus do not have vocational trainees employed. All the rest of the acute hospitals with anaesthesia services are accredited for
training. While each of the four New Zealand rotational training programmes must contain at least one provincial/rural hospital, as it is recognised that exposure to rural hospitals is said to increase the likelihood of trainees returning to them as specialists, not all trainees can be accommodated in those hospitals. ANZCA is proactive in supporting rural hospitals to become accredited for training. While usually some extra resources are needed to bring a hospital up to standard for training, this will also bring added benefits to the patients.

The ARRG recommends that more SHO and vocational trainee positions are created in smaller centres, and that those not yet accredited for vocational training are supported to make the improvements that will enable accreditation. Smaller centres do not have the same access to vocational trainees, which reduces the anaesthesia workforce to some extent but more importantly this reduces the chance of trainees to have a positive exposure to a smaller centre practice reality. In turn this reduces the chances of a trainee deciding to make a smaller centre their future specialist location.

Some smaller centres are much more likely to need locums. This has costs with respect to higher turnover of staff, the need for observation and orientation of new staff, and obviously it is expensive.

Smaller centres and larger centres could provide manpower planning if they were organised on a (larger) regional basis as opposed to a DHB basis. This could allow better efficiency and staff utilisation.

The ARRG strongly recommends that the anaesthesia workforce is administered and planned on a regional cross-DHB basis so that collaboration between anaesthetic departments is maximized. This could be accomplished by the combination of DHBs or where several DHBs delegate their management in this area to one organisation (such as happens with vocational trainee management).

Examples of the benefits of such cooperation could be:

- Certain smaller centre staff could exchange with the larger centre staff for a work experience to gain or update essential skills which can then be adopted by the smaller centre.

- Acute staffing shortages in the smaller centres could be handled by coordination within a bigger pool which gives more options to find a solution.

- Other countries have found benefit in designing split site SMO jobs where the routine is to spend some time each year, perhaps with appropriate incentives, at another hospital location at a smaller centre. However recognition must be given to the fact that there is a reasonable distance between most of these smaller centres and larger centres in NZ and this has the potential to impact on the SMOs personal/family wellbeing.

Also it must be noted that just as with the bonding of medical students in exchange for reduction of their education debts, it seems rational to consider providing financial
incentives for those anaesthesia SMOs who are prepared to commit to a smaller centre for a specific period.

**Measures to allow Anaesthesia SMOs to work beyond age 65.**

There is no doubt that some anaesthesia specialists are capable and willing to work beyond age 65. Some continue to work overseas, and some work locally. However this is not the norm.

With appropriate supervision and monitoring the ARRG believes that there is a potential in the future for more aged but competent anaesthesia staff to deliver some kinds of anaesthesia care. It could be out of OR work such as anaesthetic pre-assessment clinic work, in selected OR work or a combination of both.

The ARRG recommends that the on-going employment of anaesthetic SMOs beyond the age of 65 be considered proactively with detailed examination of how this could work. Then, if agreed, such a policy should be offered to those SMOs who wish to participate, after the standards and framework of such work is defined.

**Measures to increase efficiency in ORs**

OR management is ultimately one example of production line management. The ARRG discovered many ways throughout NZ that this could be improved, and the options which would be useful are likely to be different across the nation. The importance of this aspect is large. Some examples will make the picture clearer:

- A major centre has OR theatres often vacant while close by, often in the same building, other OR theatres are full and cases are being delayed. However the IT communication resources do not allow this underutilization to be observed and the opportunity to do useful work is lost. This kind of IT equipment is routinely used overseas and should be widely used here, and is not.

- There are many examples happening currently where leave management by certain OR staff resulted in late cancellation of lists. This represents huge inefficiency, let alone disruption to the patients. Better leave management would reduce this very costly wastage. Although the most conspicuous examples of this which we found were to do with surgeon leave, it is likely to be relevant for all OR workers.

- Roster management of OR staff in the public hospital system can result in cancelled cases. An example might be a case which is planned to run from 1500 to 1930 in the afternoon is therefore not allowed to start since it will cause staff that are rostered off at 1630 to stay late. In the end the OR theatre may lie empty from 1500 due to this, and the free time and space is not used. More flexible rosters, with appropriate incentives, where implemented has resulted in much better productivity.

- OR theatres are generally used in the 40 daylight hours in a workweek. Not much use is made of the remaining 128 hours of availability for these OR theatres - they are empty. Meanwhile we are told that many new OR theatres
are being built and private OR theatres lie empty at times. In the future with more health care demand there is an opportunity to use current resources for more extended hours rather than, or in addition to, building new ORs. This measure alone would have the potential to reduce capital expenditure requirements considerably.

- In some hospitals patient stay in the ward beds after surgery is prolonged for inefficiency reasons. This then limits OR throughput. A similar concern often applies to ICU management and resources. In recent times some limitations in ICU resources have completely stopped efficient OR throughout in some hospitals. Attention to these factors has resulted in increased OR outputs with NO INCREASE in anaesthesia manpower at all.

The ARRG recommends that as a minimum that an OR productivity taskforce is formed to standardise OR efficiency measures nationally and is empowered to examine where the blockages are to efficient use of current OR theatres. The ARRG knows that the MOH has examined this issue before but implementation of productivity enhancing strategies needs renewed urgency if this problem is to be tackled. A taskforce should have a heavy representation of anaesthesia, and surgical staff. The taskforce should report to the National Health Board.

**Measures to reduce the demand for health care.**

Much health care that takes place in an OR is involved in the management of preventable diseases or conditions. Better attention to these conditions would go a long way to reducing health care demand. It is rational that strong measures should be taken with respect to these conditions and many others, to reduce the future health care demand, to make whatever NZ anaesthetic resources we have, cope better with this demand.

Examples of such conditions include:

- Anaesthesia staff cope with the large workloads of trauma generated by road accidents, including those caused by excessive alcohol in drivers.

- They also look after cardiac patients damaged by rheumatic fever, which is a preventable third world disease that nevertheless exists in NZ.

- Obesity and its many complications such as diabetes, and high blood pressure are often the background to a range of OR procedures such as Coronary artery bypass graft, leg ulcers, amputations and complications in pregnancy. Obesity is essentially out of control in much of NZ.

- Cigarettes are responsible for much OR work including management of lung cancer, coronary artery disease and vascular problems.

The ARRG knows full well that there is much debate in NZ society about how much to interfere with an individual’s choices in life when confronting some of these public health issues. **However the ARRG does not believe that there has been much useful debate on the issue of whether NZ can AFFORD the bill** for or the
excessive workload of these preventable conditions and diseases. In addition many NZ anaesthetists have lived and worked in other countries which have used a much more interventional approach for this aspect of health care management, with good results.

The ARRG recommends that the government commences, as part of a health care demand reduction strategy, an engagement with the medical profession on the above issues and many others with the distinct purpose to reduce the health care burden of preventable disease and conditions. This should be a specific funded requirement of the National Health Board, and should be reported on each year. As part of this the public health costs of the various conditions should be brought to the attention of the public of NZ annually to stimulate and engage people in debate over these issues.

Measures to cope with an anticipated workload for sedation, especially sedation for endoscopy (including the colon cancer screening government projects)

The NZ government has recently embarked on a pilot project for colonoscopy for colon cancer screening. This kind of endoscopy often requires sedation to relieve pain and anxiety. In addition, some of these same patients have significant co-morbidities which mandate close monitoring during colonoscopy. Endoscopy under sedation has become a major sector of the Australian health care system, including anaesthesia, in recent years. Most of this care in Australia is provided by anaesthesia doctors - both trainees and specialists.

If this kind of case escalates in numbers as the Australian experience shows can happen, then we all have to consider how to provide the anaesthetic workforce for this. This kind of sedation and monitoring already happens for this procedure in NZ.

Not all cases for endoscopy will require a doctor to do this sedation but some safe sensible framework needs to be in place. The ARRG recommends:

- There needs to be adequate patient assessment beforehand, preferably under anaesthetic SMO guidance, so that cases which require additional anaesthesia expertise are always identified before the endoscopy starts. This assessment could be done by a Clinical Nurse Specialist or appropriately trained nurse applying good protocols.

- There needs to be sufficient skill, in terms of anaesthesia SMO skill, always available at short notice to assist when needed and to maintain patient safety.

- Anyone giving the sedation should be under the supervision and support of the local anaesthetic department, who should also have taken a strong role in the training of the “sedationist” personnel.

Reassessment of the need for a PGY2 year of junior doctor training in the big picture of anaesthesia SMO career training.
The ARRG knows that there is on-going consultation within the MCNZ and the medical education community examining what the benefits are for a PGY2 year as a house surgeon. With respect to anaesthesia specialist training, where the combined medical school, house surgeon and registrar/fellowship years can add up to more than 13 years it is rational to see if the PGY2 year has to be spent as a house surgeon as opposed to commencing dedicated anaesthesia training. There is no doubt that there is variation of opinion within anaesthetic SMOs and trainees on the value of this PGY2 year. The advantage of allowing earlier entry to anaesthetic registrar training is that it shortens by about 7% the time to becoming an SMO. The disadvantage is that the base of general medical training is reduced. In addition, because of employment regulations – the junior doctors are gaining less general basic training exposure than previously – possibly they will be further disadvantaged if a further year is lost from this all important basic training period.

The ARRG suggests that the value of the PGY2 year to anaesthetic training be evaluated further. The routine need for the PGY2 year needs exploration such that no final recommendation could be made by the ARRG on this matter. We suggest further debate on this issue is required.

Chart 5. A Schematic showing how DHBs could be merged to enable better distribution of patients and staff.
Regional Delivery of Healthcare versus the District Health Board Model

It has become obvious to those of us working in New Zealand Healthcare that the District Health Board (DHB) model of healthcare delivery has some significant limitations. New Zealand which has just over 4 million inhabitants, has 20 DHBs which results in a silo effect of healthcare provision. Because of the need to operate within tight budgetary constraints collaboration between DHBs is minimised owing to the financial charges incurred when sending patients from one DHB to another. This has led to duplication of some services even when there is minimal geographical separation. This results in the inflexible deployment of staff and patients between DHBs when logic may suggest otherwise. An alternative model of care that the AARG is aware of is the so called “hub and spoke” model where the hub can direct patients to the most appropriate spoke. This model has been described extensively\textsuperscript{10}. The schematic above (Chart 5) illustrates how combining DHBs or hospitals in an integrated approach could result in more efficient allocations of staff and/or patients.

Changes to the RMO work conditions to increase flexibility and also to increase exposure to smaller centres.

- The AARG discovered that in some places in NZ employment restrictions with rostering of anaesthetic vocational trainees has decreased clinical exposure and work of these trainees under the pretext of prevention of fatigue. There are almost certainly more flexible rosters which could be implemented which would provide more opportunity for work, but which would not interfere with a basic requirement for adequate sleep. However the process for engagement with RMOs needs to better utilised by all parties so that opportunities for agreement around the use of more flexible rosters can be maximised. Engagement under the current RMO MECA to increase flexibility is challenging and is underpinned by a process centred on RMO agreement.

It is an anomaly when a current roster that is supposed to prevent fatigue is used for anaesthetic trainees and yet those same trainees in turn take up extra locum work in their spare time. This happens now with some anaesthetic trainees.

The AARRG recommends that the RMO MECA be changed to allow more flexibility and clinical work outputs by anaesthesia trainees (= more flexible rosters), but still with a requirement to prevent fatigue.

- In addition the AARRG discovered that the smaller centres would dearly like to get more anaesthetic trainees coming to them as a matter of course. Other specialties such as orthopaedics require this. The aim is to encourage any future latent potential for an anaesthetic SMO to eventually decide to permanently live and work in a small town area.

If the trainees never get a chance to work in these places they will never know the attractions of such a work location.
There might need to be some incentives (financial or otherwise) for the trainees to do this. It would need to be covered proactively in the RMO contracts. But there is no doubt that this needs to be done as part of the package of measures to promote staffing in the smaller centres.

The ARRG recognises that this kind of small centre exposure could be obligatory, as the orthopaedic surgeons and other vocational training schemes require for their trainees, but we did obtain feedback about potential resistance by anaesthetic trainees.

The ARRG recommends that each vocational trainee in anaesthesia must be rotated to a rural hospital during training.

The use of physician SMO extenders

Physician assistants

Our assessment is that for OR clinical duties in NZ they are not a preferred option at all.

Physician assistants (PA) are used as doctor substitutes in the USA (where they have existed for decades), and are currently being trained in Australia. They are also being trained and used in the UK. Other countries have them. In general terms they are science or health graduates who have gone on to have 2 more years of didactic and clinical training. They then work under doctor leadership exclusively. They are not multi-speciality and tend to stay in one work area as opposed to junior medical staff who rotate as part of their training. PA-As who decide to work as anaesthesia staff are somewhat different to “regular” PAs as in both the UK and the USA they have dedicated 2 year anaesthesia training and do nothing else.

In the UK there has been an anaesthesia training program for PAs for about 8 years and some are now working in anaesthetic departments. To date there has not been any assessment, to our knowledge, as to whether they are cost effective. We have received conflicting information as to whether the UK training programs are expanding or contracting.

The UK has two significant drivers towards the trialling of the use of PA workers in anaesthesia.

One is the European working time directive (EWTD) which restricts the number of hours a medical doctor can work, including anaesthesia, thus creating a need for more anaesthesia staff. NZ is unlikely to implement such arbitrary rules soon (although we have taken other measures to address the issue of SMO fatigue and safety). The introduction of the EWTD created an artificial need for 13% more anaesthesia personnel to satisfy the requirements of the EWTD. Since the NHS has financial restrictions they have a strong incentive to train and recruit PA staff as opposed to new SMOs.
The other feature of UK clinical practice is that they do not normally have a day-to-day OR supervising anaesthesia SMO whose job it is to facilitate the turnover between cases. In this UK model the use of a new person—a PA—who can facilitate case turnovers, along with a place to do so (commonly called the anaesthetic induction room), has created potential benefits in efficiency. In NZ most theatres do not have anaesthetic induction rooms and we ALREADY HAVE as a matter of practice a supervising unallocated SMO who is there to supervise vocational trainees, and help with efficient turnovers between cases. ANZCA requires such a person wherever there are trainees in anaesthesia.

In addition NZ has one other non-UK feature. Our normal workload has a variety of cases and severity of illness, all mixed up often on the same day. It is not envisaged that in NZ we can easily separate off large numbers of easy elective cases which is the best environment in which to insert a PA worker.

Feedback about the UK is not universally in support of PA workers. They only work 0800-1700, and do not do call. They are expensive and not particularly flexible. In some cases they tend to work on only the easy cases, which tend to work best in larger centres which can condense such numbers of cases. Some medical anaesthesia trainees do not like the PA workers getting all the easier cases and trainee clinical exposure is becoming an issue. On balance the UK has adopted PA workers for different challenges, to some extent, than NZ faces, and has results which are not yet clear, and are definitely not proven cheaper, and do not address on-call staffing issues.

In the USA PA workers in anaesthesia are more established and function similarly to a junior level vocational trainee in NZ. They earn US$82,000+ and usually work 0700-1700 doing no after-hours call. They are engaged in many kinds of cases and will often work with less challenging cases under doctor supervision. If NZ was ever to embark on training such PA anaesthesia workers the USA would undoubtedly try to recruit them.

In Australia there are several PA training programs aimed at non-anaesthesia medical work. No graduates have gone into the workforce yet but this will soon occur. These programs will provide much needed support for stressed and overworked GPs in rural Australia. In addition in Adelaide an anaesthesia directed PA program is training PA workers to work in the peri-OR environment, but NOT in the OR. Such work niches as sedation, preoperative assessments, pain rounds and post-op visits may be the potential for this kind of PA.

There is no doubt that given the usual financial differences between remuneration levels in NZ and Australia, and the ease of migration, that any NZ trained PA staff will be recruited to Australia.

**Nurse Anaesthetists**

The ARRG does not recommend the establishment of a nurse anaesthetist (NA) manpower model in NZ.

NAs are well established in the USA and in several European countries.
In Europe they always work under medical supervision. In Sweden they are paid less than half what a doctor gets paid and have close supervision. Some OR suites have specific design features to increase the ability to observe and coordinate between anaesthesia locations. These NA workers do not do on call work. The advice we obtained from staff from such places was that it worked well, but to create a system which worked like this from where we currently are in NZ would be an immense undertaking and would need considerable time and resources. It should be noted that even in Europe with close geographical proximity there is considerable variation in the model of delivery of anaesthesia. In Germany, all anaesthesia is physician administered whilst in the Netherlands, Denmark and Scandinavia Nurse Anaesthetists are extensively used but in a system where they work under medical supervision at all times.

In the USA NAs are Certified Registered Nurse Anaesthetists (CRNAs). They have existed for decades and their training is generally 2 years in addition to nursing training. Often it is an experienced ICU or OR nurse who decides to do this. Then the CRNAs work either on their own, or under medical supervision (depending on the state). They typically make in excess US$150,000 per year. They do not do on call work generally. They are less flexible and multi-skilled than the medical anaesthesia specialists. Several of the ARRG have worked in the USA and we received feedback from other SMOs with experience of this model.

There are legitimate concerns among the ARRG about the quality of care delivered by CRNAs. The CRNA worker being supervised by a doctor is a model in the USA which has led to much confrontation and personal argument. In Seattle the CRNA workforce costs more than the Doctor of Medicine (MD), person to person, since the MD anaesthesia staff can work at all hours and on all cases. Others who have examined this issue have found that US CRNAs tend not to function within the medical anaesthesia care team, as opposed to European style nurse anaesthesia which is very team driven\textsuperscript{11}.

**Clinical Nurse Specialists**

The ARRG recommends that there may be a role for increased use of clinical nurse specialists (CNS) to augment NZ anaesthesia manpower in the future.

There are features which make this option both desirable and undesirable and there is some variation between anaesthesia SMO opinions.

CNS workers can work in pre-operative anaesthesia clinics, can help a great deal with SMO supervised pain rounds, and could conceivably be an intelligent source of staff for provision of supervised sedation services (see above). To some extent this is already happening in NZ. However there is some regret among some SMOs that they have had to drop some kinds of work which has then been picked up by CNS workers. These SMOs highlight the useful profile of the SMO on such services to the patients, and the lack of desire to sequester the SMO workforce to the OR alone. CNS can cost up to NZD$90,000 which is close to a vocational trainee.
The ARRG recommends that if CNS are used in this manner then they should be under the direct supervision of the anaesthesia departments involved since this is where the clinical responsibility will flow. It is not helpful to have both nursing and anaesthesia control some staff at the same time.

**GP Anaesthetists**

The ARRG is aware that there is currently a GP gaining anaesthesia experience in NZ.

Nevertheless the ARRG recommends that this option is not used in the future to address anaesthesia manpower issues in NZ as a policy; even if from time to time an individual decides to make the transition from GP to anaesthesia MO or SMO (which happens on occasion as individuals change work and career preferences). NZ has a history which involves GP anaesthesia providers and a major positive step change occurred when NZ moved to an entirely specialist or MO based workforce.

In Australia there is a legitimate role for the GP anaesthetist due to occasional extreme distances between some rural patients and SMO staffed base hospitals. Australian rural GPs may have to confront a range of clinical cases where anaesthesia skills will be relevant and appropriate and where evacuation of the patient to a location with anaesthetic SMOs will take too long. In this context GPs who can perform anaesthesia are very useful. ANZCA has acknowledged this and supports GP anaesthesia training for this kind of work. In NZ, by and large, there is not a problem of coping with such long distance transfers of patients.

We do see a severe upcoming shortage of the NZ GP workforce and would rather a GP who is interested in anaesthesia to obtain SMO or MO status in anaesthesia, or return to being a GP, as opposed to being both a GP and an occasional anaesthesia provider. Certainly the clinical anaesthesia standards which are now required will tend to make this a distinctly less sensible option than it has been in the past.

**Medical Officer**

The ARRG supports the use of Medical Officers (MO) to provide anaesthesia care under SMO supervision.

In NZ there are currently MOs who work only in anaesthesia and where their contribution works well. They have supervision by SMOs and can potentially take call. The usual NZ anaesthesia MO has had several years of experience/training in anaesthesia but for one reason or another has decided not to progress to taking the ANZCA or equivalent qualifications.

In the UK this role is called the SGA or staff grade anaesthetist. It has a variety of expressions ranging from someone who wants to gain some money and work experience before deciding whether to go on further to full specialist qualifications, to the person who has decided that they do not want to take the specialist exams, but knows they can provide useful work for a hospital anaesthetic department, and likes this status and work.
The advantages include an already established presence and certification/licensing framework, suitable salaries, and that we know it works well already.

**Anaesthetic Technicians**

There is strong support by the ARRG for making use of anaesthetic technician staff in more productive OR roles.

NZ is unique among developed nations with its model of trained anaesthetic technician staff and it is clear that with additional training some of them could do many practical tasks to increase OR efficiency. This would likely be cost effective and would not require the time or money inputs that training NAs or PAs would require.

The ARRG encountered situations however where nursing hierarchy had impeded or stopped such initiatives which had been tried in at least one major centre, due to professional jealousy issues. Not all anaesthetic technician staff in NZ are actually under the control of the local anaesthetic SMO department, some are under nursing administration.

The kinds of roles which were suggested included insertion of intravenous (IV), intra-arterial (IA) and peripherally inserted central catheter (PICC) lines, among others.

The ARRG recommends that engagement with the Medical Laboratory Science Board and its Anaesthetic Technician Advisory Committee be undertaken formally as soon as practicable to discuss what roles can be implemented to increase the responsibilities of these valuable staff members, acknowledging competence requirements and training needs must be met.

The ARRG recommends the setting up of two pilot projects in two DHBs -Waitemata and Mid-Central - to trial enhanced practice for anaesthetic technicians. Preliminary discussions with the DHBs concerned are under way in regards to supervision requirements with the Departments of Anaesthesia with responsibility and liability lying with the supervising medical anaesthetist. Initial talks in regard to elective services funding of the said projects are in their infancy and applications pending for funding, contingent on positive responses from HWNZ and agreement with the DHBs concerned.

A “Super” Anaesthetic Technician role would continue under the direct supervision of a specialist anaesthetist with the aim of maximising efficiencies in OR and increased patient throughput in elective surgical services. Credentialing requirements will be put in place to maintain patient safety until such time as ATs are registered and an agreed scope of practice has been gazetted. The pilots would seek to have enhanced skills recognised as part of that process. Importantly the ARRG do not advocate the role of an AT as a substitute for a medically qualified anaesthetist in patient care.
**Impact of other HWNZ workforce reviews and Ministry of Health projects**

It is difficult for the AARG to comment in detail on overlaps or consequential effects of the other 15 or so reviews under way concurrently when the detailed reports are still being finalised. However, it is noteworthy that the gastroenterology review has estimated a projected sharp increase in service demand with the introduction of colonoscopy screening. This will impact on demand for sedation services and onward referrals to surgical intervention including anaesthesia requirements (refer earlier page 22).

The ophthalmology/optometry review has commented on opportunities for task substitution in cataracts and eye blocks such that the service may in the future be delivered by alternative providers to medical anaesthetists. The AARRG has not been invited to comment on their early recommendations; suffice it to say that discussions will need to occur at some point around the service interface.

Recommendations by the Ministry of Health to implement more stringent DHB standards in obstetric units to improve quality and safety of mother and baby services will have a direct impact on anaesthetic specialist staffing numbers. An obstetric specialist or registrar AND an anaesthetist or anaesthetic registrar will be required to be available on site 24 hours and on call within 20 minutes exclusively for obstetric services. This is a recommendation still at this stage, developed in response to inadequate cover in some units resulting in delays in treatment. In addition, pre-anaesthetic assessment by anaesthetists for pregnant women has been identified as an unfunded item required to be addressed. Evidence supports early clinical assessment in terms of mother and baby outcomes.

We understand elective services funding for two pilot projects in Gisborne and Hutt Valley DHBs for ODPs/ODAs (UK trained assistants recognised in NZ but not directly comparable to anaesthetic technician training) has been approved but no discussions have been entered into with the AARRG or anaesthetists or the anaesthetic technicians. It is unclear to us what impact or direction these projects may have on workforce developments.

# 8. Recommendations

The following statements are recommendations of the AARRG.

1. **We recommend that** the Anaesthetic workforce comprising both medical specialists and technicians explore ways in which technicians roles could be enhanced or extended to ensure more productive delivery of OR services.

2. **We recommend that** regional oversight groups (ROG) are created to oversee the efficient deployment of Anaesthesia SMOs across multiple worksites within a region. The oversight groups will have responsibility for recruitment and retention initiatives within their designated region. The key goals are to ensure filling of Anaesthesia Specialist vacancies as they arise and reduce
dependency on expensive hospital locums. The ROGs will also function in a monitoring capacity so as to highlight areas of concern in advance.

3. **We recommend that there is an increase of training positions in those smaller hospitals already accredited by ANZCA for vocational training, and those smaller hospitals not accredited for training be supported to meet the criteria for accreditation.**

4. **We recommend that the issue of theatre productivity be given more urgency as this is a complex matter that is multi-factorial in origin.**

5. **We recommend that consideration be given as to the expansion of the Medical Officer grade of anaesthesia provider. This recruitment initiative could form a possible trial for Health Workforce New Zealand.**

6. **We recommend that healthcare services are delivered in a “hub and spoke” model on a regional basis so as to introduce flexibility and efficiency in the way service provision is enabled. This would have the effect of preventing some of the duplicity of healthcare services that has arisen in the current DHB model of care.**

7. **We recommend that the Anaesthesia Technician workforce explore, together with input from Specialist Anaesthetists, ways in which their scopes of practice could be improved or expanded to ensure more productive delivery of OR services. This may entail the need for a higher level of tertiary study depending on the results of this process.**

8. **We recommend that extended use of operating rooms outside of conventional working hours be explored as an alternative to building more operating theatres. This would reduce the significant upfront capital expenditure incurred when building new facilities. There is also potential to increase workforce participation rates among female healthcare workers by further provision of work in hours when childcare costs may be less likely to be an issue.**

9. **We recommend the Medical Council of NZ re-evaluate the registration processes for international medical graduates who apply to work here. While we acknowledge a reliance on overseas trained specialists opens NZ up to international criticism, a pragmatic response is to maximise the existing sources of supply when competing internationally, at least until such time as internal workforce solutions start generating positive flows.**

### 9. Acknowledgements

This report has been a major undertaking for the New Zealand Society of Anaesthetists (NZSA) in conjunction with the New Zealand National Committee of the Australian and New Zealand College of Anaesthetists (ANZCA). The problems outlined in the report will pose significant challenges for governments and health planners around the world over the next decade and beyond. Thanks must go to Ms Philippa Bascand, CEO of NZSA for her untiring efforts and Prof. Des Gorman,
Chairman of Health Workforce New Zealand, for his support of this project and the advice of his senior staff. My fellow current and past members of the ARRG need special mention for the huge amount of effort expended during the national consultation phase and beyond. Drs Rob Carpenter President NZSA, Nigel Waters (Co-chair of the ARRG), Jeremy Cooper, Geoff Long, Nav Sidhu, Andrew Love, Graham Roper, Gerry McHugh, Leona Wilson, Andrew Warmington, Jack Hill and Tom Fernandez all deserve high praise. I would also like to acknowledge Drs Andrew Connelly and Emma Patrick for their help and assistance and lastly Dr Guy Ludbrook, Anaesthetist, for his kind invitation to attend a one day meeting in Adelaide on the role of the Physician Assistant in healthcare.

Dr Andrew Reid  Dr Nigel Waters
Co-Chair ARRG   Co-Chair ARRG
10. References


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11. Appendices

Appendix A – Heads of Anaesthetic Department Survey

Tabulated data is displayed in response to the question above each table.

Table 1- For the 2009 year, approximately how many operations were performed by your Department/Service?

<table>
<thead>
<tr>
<th>Response</th>
<th>Per cent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not sure</td>
<td>0.00%</td>
<td>0</td>
</tr>
<tr>
<td>0 – 5,000</td>
<td>29.60%</td>
<td>8</td>
</tr>
<tr>
<td>5,001 – 7,500</td>
<td>25.90%</td>
<td>7</td>
</tr>
<tr>
<td>7,501 – 10,000</td>
<td>18.50%</td>
<td>5</td>
</tr>
<tr>
<td>10,000 or more</td>
<td>25.90%</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 2 - How many OPERATING ROOMS are located in your main theatre complexes (please exclude REMOTE LOCATIONS, like radiology, cardiology, etc.). Enter the number of operating rooms in the box below.

<table>
<thead>
<tr>
<th>Average</th>
<th>Count</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.15</td>
<td>236</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 3 - How many of the OPERATING ROOMS identified above, are used at least 7.5 half-days per week. Enter the number of operating rooms in the box below.

<table>
<thead>
<tr>
<th>Average</th>
<th>Count</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.42</td>
<td>212</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 4 - Do any of your OPERATING ROOMS have ANAESTHETIC ROOMS?

<table>
<thead>
<tr>
<th>All</th>
<th>Most</th>
<th>Some</th>
<th>None</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>5</td>
<td>1</td>
<td>23</td>
<td>32</td>
</tr>
<tr>
<td>9.38%</td>
<td>15.63%</td>
<td>3.13%</td>
<td>71.88%</td>
<td></td>
</tr>
</tbody>
</table>
Table 5 - For each resource deficiency listed below, please indicate the FREQUENCY that this factor has contributed to any REDUCTIONS in THEATRE PRODUCTIVITY (e.g. list cancellations, reduced cases...) over the previous 12 months.

<table>
<thead>
<tr>
<th>Resource Deficiency</th>
<th>Not Sure</th>
<th>Daily</th>
<th>Weekly</th>
<th>Fortnightly</th>
<th>Monthly</th>
<th>Several Times per Year</th>
<th>Never</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaesthetist Shortage</td>
<td>0.0%</td>
<td>6.1%</td>
<td>15.2%</td>
<td>15.2%</td>
<td>21.2%</td>
<td>36.4%</td>
<td>6.1%</td>
<td>33</td>
</tr>
<tr>
<td>Surgeon Shortage</td>
<td>3.0%</td>
<td>0.0%</td>
<td>3.0%</td>
<td>13.3%</td>
<td>20.0%</td>
<td>53.3%</td>
<td>6.1%</td>
<td>30</td>
</tr>
<tr>
<td>Surgeon Unavailability</td>
<td>6.3%</td>
<td>0.0%</td>
<td>15.6%</td>
<td>9.4%</td>
<td>15.6%</td>
<td>53.3%</td>
<td>3.0%</td>
<td>32</td>
</tr>
<tr>
<td>OR Nurse Shortage</td>
<td>0.0%</td>
<td>0.0%</td>
<td>9.7%</td>
<td>9.7%</td>
<td>16.1%</td>
<td>41.9%</td>
<td>22.6%</td>
<td>31</td>
</tr>
<tr>
<td>Recovery Nurse Shortage</td>
<td>9.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>6.1%</td>
<td>6.1%</td>
<td>18.2%</td>
<td>60.6%</td>
<td>33</td>
</tr>
<tr>
<td>Anaes Tech Shortage</td>
<td>3.0%</td>
<td>3.0%</td>
<td>3.0%</td>
<td>3.0%</td>
<td>12.1%</td>
<td>39.4%</td>
<td>36.4%</td>
<td>33</td>
</tr>
<tr>
<td>Limited HDU/ICU beds</td>
<td>0.0%</td>
<td>3.0%</td>
<td>15.2%</td>
<td>9.1%</td>
<td>9.1%</td>
<td>48.5%</td>
<td>15.2%</td>
<td>33</td>
</tr>
<tr>
<td>Limited PACU beds</td>
<td>0.0%</td>
<td>3.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>6.5%</td>
<td>22.6%</td>
<td>67.7%</td>
<td>31</td>
</tr>
<tr>
<td>Limited Ward Beds</td>
<td>0.0%</td>
<td>0.0%</td>
<td>6.1%</td>
<td>18.2%</td>
<td>27.3%</td>
<td>42.4%</td>
<td>6.1%</td>
<td>33</td>
</tr>
<tr>
<td>Limited Ward Staff</td>
<td>21.9%</td>
<td>3.0%</td>
<td>3.0%</td>
<td>6.1%</td>
<td>6.1%</td>
<td>31.3%</td>
<td>28.1%</td>
<td>32</td>
</tr>
<tr>
<td>Other Resource Factors NOS</td>
<td>40.0%</td>
<td>0.0%</td>
<td>10.0%</td>
<td>5.0%</td>
<td>0.0%</td>
<td>25.0%</td>
<td>20.0%</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 6 - From the following list, which resource deficiency has been the MAJOR CONTRIBUTOR to REDUCTIONS IN THEATRE PRODUCTIVITY (e.g. list cancellations, reduced cases...) within your operating rooms, over the previous 12 months?

<table>
<thead>
<tr>
<th>Resource Deficiency</th>
<th>Percentage</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaesthetist Shortage</td>
<td>32.3%</td>
<td>10</td>
</tr>
<tr>
<td>Surgeon Shortage</td>
<td>9.7%</td>
<td>3</td>
</tr>
<tr>
<td>Surgeon Unavailability</td>
<td>19.4%</td>
<td>6</td>
</tr>
<tr>
<td>OR Nurse Shortage</td>
<td>6.5%</td>
<td>2</td>
</tr>
<tr>
<td>Recovery Nurse Shortage</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Anaes Tech Shortage</td>
<td>3.2%</td>
<td>1</td>
</tr>
<tr>
<td>Limited HDU/ICU beds</td>
<td>9.7%</td>
<td>3</td>
</tr>
<tr>
<td>Limited PACU beds</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>
### Table 7
In the last 12 months, has your Department/Service had to significantly RESTRICT OR CANCEL LEAVE to maintain normal services (please exclude conference leave).

<table>
<thead>
<tr>
<th></th>
<th>Per cent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33.3%</td>
<td>11</td>
</tr>
<tr>
<td>No</td>
<td>66.7%</td>
<td>22</td>
</tr>
</tbody>
</table>

### Table 8
Do you have any vacancies for the following positions? (tick box if there are vacancies).

<table>
<thead>
<tr>
<th>Position</th>
<th>Per cent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMO (vocationally registered)</td>
<td>90.0%</td>
<td>18</td>
</tr>
<tr>
<td>Medical Officer</td>
<td>5.0%</td>
<td>1</td>
</tr>
<tr>
<td>GP Anaesthetist</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>RMO (ANZCA Trainee)</td>
<td>20.0%</td>
<td>4</td>
</tr>
<tr>
<td>RMO (Non-ANZCA Trainee)</td>
<td>5.0%</td>
<td>1</td>
</tr>
<tr>
<td>Perioperative Physician</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other types, NOS</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

### Table 9
How many SMO FTEs are currently STAFFED by LOCUMS or TEMORARY APPOINTMENTS?

<table>
<thead>
<tr>
<th>Number of FTEs</th>
<th>Per cent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>38.46%</td>
<td>10</td>
</tr>
<tr>
<td>0.5</td>
<td>7.69%</td>
<td>2</td>
</tr>
<tr>
<td>0.8</td>
<td>3.85%</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>23.08%</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>7.69%</td>
<td>2</td>
</tr>
</tbody>
</table>
Table 10 - Please indicate which of the following SUPPORT STAFF are currently employed by your Department/Service?

<table>
<thead>
<tr>
<th>Support Staff</th>
<th>Yes</th>
<th>No</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaesthetic Technicians</td>
<td>85.2%</td>
<td>14.8%</td>
<td>27</td>
</tr>
<tr>
<td>Anaesthetic Nurses</td>
<td>30.8%</td>
<td>69.2%</td>
<td>26</td>
</tr>
<tr>
<td>Nurse Practitioners (Pain Service)</td>
<td>64.0%</td>
<td>36.0%</td>
<td>25</td>
</tr>
<tr>
<td>Nurse Practitioners (Other Services)</td>
<td>30.4%</td>
<td>69.6%</td>
<td>23</td>
</tr>
<tr>
<td>Other support staff NOS</td>
<td>45.5%</td>
<td>54.5%</td>
<td>22</td>
</tr>
</tbody>
</table>

Table 11 - Not all activities/services undertaken by your Department/Service will be completed within your main theatre complex. From the following list, please indicate which activities/services are provided by YOUR Department/Service.

<table>
<thead>
<tr>
<th>Activity/Service</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Pain Service</td>
<td>85.7%</td>
<td>10.7%</td>
<td>3.6%</td>
<td>28</td>
</tr>
<tr>
<td>Chronic Pain Service</td>
<td>48.1%</td>
<td>48.1%</td>
<td>3.6%</td>
<td>27</td>
</tr>
<tr>
<td>Preadmission Clinics</td>
<td>89.3%</td>
<td>10.7%</td>
<td>0.0%</td>
<td>28</td>
</tr>
<tr>
<td>High Risk Outpatient Clinics</td>
<td>63.0%</td>
<td>29.6%</td>
<td>7.4%</td>
<td>27</td>
</tr>
<tr>
<td>Labour Analgesia Service</td>
<td>82.1%</td>
<td>10.7%</td>
<td>7.4%</td>
<td>28</td>
</tr>
<tr>
<td>Medical Evacuations &amp; Retrievals</td>
<td>36.0%</td>
<td>56.0%</td>
<td>8.0%</td>
<td>25</td>
</tr>
<tr>
<td>Inter-hospital Transport</td>
<td>32.0%</td>
<td>60.0%</td>
<td>8.0%</td>
<td>25</td>
</tr>
<tr>
<td>Teaching/Education</td>
<td>100.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>28</td>
</tr>
<tr>
<td>Research</td>
<td>59.3%</td>
<td>37.0%</td>
<td>3.7%</td>
<td>27</td>
</tr>
<tr>
<td>Other services, NOS</td>
<td>45.5%</td>
<td>36.4%</td>
<td>18.2%</td>
<td>11</td>
</tr>
</tbody>
</table>
Table 12 - Assuming your Department/Service was to expand its future workload (say 50% over a 5-year period), how confident are you that your Department/Service would cope?

<table>
<thead>
<tr>
<th>Response</th>
<th>Per cent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Confident</td>
<td>3.7%</td>
<td>1</td>
</tr>
<tr>
<td>Confident</td>
<td>11.1%</td>
<td>3</td>
</tr>
<tr>
<td>Neutral</td>
<td>11.1%</td>
<td>3</td>
</tr>
<tr>
<td>Not Confident</td>
<td>48.1%</td>
<td>13</td>
</tr>
<tr>
<td>Definitely Not Confident</td>
<td>25.9%</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 13 - From the following list of options, please rate how useful you think each POTENTIAL SOLUTION would be in solving any problems related to the provision of anaesthetic services (either current or future) within YOUR Department/Service.

<table>
<thead>
<tr>
<th>Indexing SMO salaries to Australian</th>
<th>44.8%</th>
<th>27.6%</th>
<th>27.6%</th>
<th>0.0%</th>
<th>0.0%</th>
<th>29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted Increases of Salary to areas of need</td>
<td>35.7%</td>
<td>39.3%</td>
<td>10.7%</td>
<td>10.7%</td>
<td>3.6%</td>
<td>28</td>
</tr>
<tr>
<td>Increasing SMO non-cash benefits</td>
<td>24.1%</td>
<td>34.5%</td>
<td>27.6%</td>
<td>13.8%</td>
<td>0.0%</td>
<td>28</td>
</tr>
<tr>
<td>Increased CME/CPD time</td>
<td>17.2%</td>
<td>17.2%</td>
<td>48.3%</td>
<td>17.2%</td>
<td>0.0%</td>
<td>29</td>
</tr>
<tr>
<td>Assistance with relocation expenses</td>
<td>17.2%</td>
<td>37.9%</td>
<td>34.5%</td>
<td>10.3%</td>
<td>0.0%</td>
<td>29</td>
</tr>
<tr>
<td>Use of Allied Health Professionals within the OR</td>
<td>6.9%</td>
<td>10.3%</td>
<td>27.6%</td>
<td>37.9%</td>
<td>17.2%</td>
<td>29</td>
</tr>
<tr>
<td>Use of Allied Health Professionals inside the OR</td>
<td>13.8%</td>
<td>48.3%</td>
<td>27.6%</td>
<td>6.9%</td>
<td>3.4%</td>
<td>29</td>
</tr>
<tr>
<td>Secondments of SMOs from other Hospitals i.e. VMOs</td>
<td>13.8%</td>
<td>37.9%</td>
<td>20.7%</td>
<td>20.7%</td>
<td>6.9%</td>
<td>29</td>
</tr>
<tr>
<td>Bonding or Student Loan Forgiveness</td>
<td>6.9%</td>
<td>51.7%</td>
<td>24.1%</td>
<td>17.2%</td>
<td>0.0%</td>
<td>29</td>
</tr>
<tr>
<td>Increasing Nos. of or acquiring Anaesthetic Trainees</td>
<td>13.8%</td>
<td>55.2%</td>
<td>20.7%</td>
<td>10.3%</td>
<td>0.0%</td>
<td>29</td>
</tr>
<tr>
<td>Other Options NOS</td>
<td>0.0%</td>
<td>0.0%</td>
<td>85.7%</td>
<td>0.0%</td>
<td>14.3%</td>
<td>29</td>
</tr>
</tbody>
</table>
Appendix B – Comments from the Heads of Department survey

Comments relevant to the question in the HoD survey listed above each section are displayed.

- For each resource deficiency listed below, please indicate the FREQUENCY that this factor has contributed to any REDUCTIONS in THEATRE PRODUCTIVITY (e.g. list cancellations, reduced cases,...) over the previous 12 months

Auckland City Hospital – Level 8
We currently close 10 theatres per month for mainly the lack of nurses and techs, sometimes anaesthetists. We also have a lack of radiology staff that impacts on production (excluding current issues associated with striking MRT) Our department runs the 2 ophthalmology theatres at GLCC

Invercargill
We are dependent on locum anaesthetic staff to provide a full service. There are times due to leave or inability to secure locums that lists are cancelled due to anaesthetist unavailability. It is unusual to cancel for surgical shortages as usually a surgeon from another speciality or a surgical registrar will be reallocated to spare lists. To avoid cancellations for anaesthetic tech shortages we hire locums to cover leave.

- From the following list, which resource deficiency has been the MAJOR CONTRIBUTOR to REDUCTIONS IN THEATRE PRODUCTIVITY (eg list cancellations, reduced cases,...) within your operating rooms, over the previous 12 months

Masterton
In the 2009 year we were short, General, Orthopaedic and Gynae Surgeons. Although we did not have a 4th full time anaesthetist the majority of the year was covered by Locum Anaesthetists.

Waitemata DHB (North Shore and Waitakere Hospitals)
Almost every week we have lists cancelled because of surgeon leave.

Rotorua
Our main reason for cancelling lists seems to be "surgeon away". Individual case cancellations are for various reasons e.g. no ward bed, unfit, DNA etc.

Auckland DHB – Surgical Short Stay Unit (SSSU)
Surgeon Unavailability

Counties Manukau DHB
Job-sized to greatly increase FTE in 2007 - expecting to reach full staff in March 2011.
Whakatane
Surgeon Shortage and lists not fully booked

Auckland City Hospital – Cardiac & ORL
Limited HDU/ICU beds. Other shortages would have become apparent if ICU/HDU beds were available.

Waikato DHB
Limited ward beds. Overflow from medicine. Much improved problem from a year ago. At that time we were cancelling as anaesthetist shortage but not currently, ICU beds also a problem for cardiac surgery.

Auckland City Hospital – Level 8
OR Nurse shortage. Issues are mainly around nurse shortages and bed shortages

Auckland DHB – Starship Children’s Hospital
Inadequate OR Capacity is the main contributor to decreased production due to acute work requiring cancellation of elective procedures

Palmerston North Hospital
Anaesthetist Shortage. 12 months ago when the hospital was busy we saw cancellations due to lack of beds. Now post-op patients will stay on trolleys and go to the day ward until a bed is free on the ward. Patients also may have a "soft " HDU/ICU admission or a prolonged stay in that unit because of ward bed shortages. Surgical patients also spill over into the medical ward.

Invercargill
Anaesthetist Shortage. We have an on-going manpower shortage and are locum dependent to provide a full service. Have recently had an RMO shortage that resulted in SMOs doing RMO work out of hours and compounded our SMO shortage.

Taranaki
Ageing theatre staff and limited numbers in a regional centre providing 24/7 cover means that elective work is impacted by overnight duties (same staff need their 9 hour breaks) currently not doing shift work as call frequency increases due to the same limited number being called on.

Canterbury
Limited HDU/ICU beds. We have no HDU facility so these level of patients compete for an ICU bed and the ICU nursing budget is only for 15 out of 18 beds.

- In the last 12 months, has your Department/Service had to significantly RESTRICT OR CANCEL LEAVE to maintain normal services (please exclude conference leave).

Tauranga
Yes certainly during high demand periods such as school holidays we have to restrict leave
Hawkes Bay
Yes management have asked that we use up leave owing, but at same time want to restrict us to no more than 2 away - this doesn't even keep up with are annual leave entitlement let alone reduce leave owing. Have had leave refused on several occasions this year.

Waitemata
We restrict leave almost every week because we would otherwise be unable to cover all the services requiring anaesthesia.

Counties-Manukau DHB
ASMS advised against this in 2008.

Auckland City Hospital – Level 8
Currently unable to allow people to utilise all their leave. We could not possibly support the number of sabbaticals should the anaesthetists all exercise their rights.

Nelson
Anaesthetists leave closely managed (only so many away at once, 6 weeks’ notice required 0 in order to maintain elective throughput. In contrast surgeon leave is short notice, whenever they like, provided colleagues do not squeal about arduous out of hours roster. Thus anaesthetists who have been denied leave find themselves at work with nothing to do, result of non-management of surgical leave.

Palmerston North
No - leave is a right - as long as I can run the afterhours (call) roster - I sanction leave. ICU roster is the difficult one as we have fewer people covering ICU - I unfortunately had to deny leave to a really good colleague and team player yesterday - difficult decision because he is a hard worker but the truth is we could not run the a/hours roster safely without him. Very difficult to recruit staff for ICU and Pain

Taranaki
We are self- policing but limit the number of consultants away except for the annual conferences when we reduce elective services to allow more to attend

Wanganui
We are only allowed two away at a time

Gisborne
We are a department of 7 FTEs currently 2 FTE down. We restrict leave to 2 away at any one time.

- Do you have any vacancies for the following positions?

Invercargill
We do not offer a peri-operative medicine service. I am looking to find locums to replace the 3 long term (12 month) locums we have in the department who leave in
the next 5 months. If positions being offered next week are accepted we will not have RMO vacancies until next August. For the last 3 months we have been short (only had 2 out of the 5 needed) of RMOs.

**Masterton**
As a rural hospital we have had trouble attracting full time staff. We have relied on Locums for a number of years.

**Tauranga**
We are considered fully staffed, however, we have had to pay an enormous amount in extra sessions to cover the workload and a recent analysis of the workload has shown that we actually need 5 more FTE’s to cope with the load and be able to employ a duty anaesthetist

**Waitemata**
We are at present in discussion with management as to what our Department FTE numbers should be. We believe we are understaffed, and their "expert" says we are over staffed. We believe we should be advertising at least 2 FTE SMO posts. We also have too few RMO (ANZCA trainees) for our work load and after hours cover requirements.

**Waikato**
No vacancy at present, to the contrary, I worry that I will not be able to employ previous registrars that want to return.

**Auckland City Hospital – Level 8**
Have just appointed 5 SMOs to cover my vacancies (they start next year) and we will have a full complement of RMOs beginning next year.

**Palmerston North**
Have just appointed 5 SMOs to cover my vacancies (they start next year) and we will have a full complement of RMOs beginning next year.

**Invercargill**
Have had longstanding vacancies; these posts are filled by overseas locums, usually on a 6 to 12 month basis.

- Not all activities/services undertaken by your Department/Service will be completed within your main theatre complex. From the following list, please indicate which activities/services are provided by YOUR Department/Service.

**Invercargill**
We have recently withdrawn our APS as the hospital will not fund an acute pain nurse and we need one to provide a service that fulfils ANZCA requirements. We stopped Chronic Pain work several years ago as it was unrealistic for a single person
to do unsupported. Patients are retrieved by the receiving hospital if going for tertiary care. We are not staffed for this.

- Assuming your Department/Service was to expand its future workload (say 50% over a 5-year period), how confident are you that your Department/Service would cope?

**Masterton**
Not very confident. For the last 10yrs we have not been able to attract full time staff and we don't see that changing in the near future.

**Tauranga**
Not confident. Not enough space in the newly redeveloped hospital to build more theatres, 0.4 theatre slots still available, about to be filled next year. Recruitment probably an issue, though not currently, i.e. we have more applicants than we can accommodate.

**Waitemata**
Confident. As we are in Auckland, our advertised posts tend to have had good numbers of applicants in the past.

**Rotorua**
Neutral. Depends - the hospital has some inefficiencies that, if improved, we could handle easily. We can stretch our service to an extent e.g. if extra lists are needed, but this would need to be either temporary or minor (10%?).

**Auckland DHB – SSSU**
Would need the corresponding increase in FTE.

**Capital & Coast**
With extra staff - confident without extra staff - not confident

**Counties Manukau**
Depends on suitably qualified SMOs being available at the time.

**West Coast**
Anaesthetists, Surgeons, and Nursing staff will be very hard to recruit. Whilst recognised to be able to train an anaesthetic technician, no permanent vocationally registered Anaesthetist is working here so cannot train a technician.

**Auckland City Hospital – Cardiac and ORL Anaesthesia**
We could recruit staff but infrastructure such as operating rooms and ICU beds not so confident.

**Auckland DHB – Starship Children’s Hospital**
Confident providing the health board provides the appropriate FTE increase.

**Palmerston North**
Not very confident. We are at capacity - both in terms of our staffing levels - already discussed. Our ICU is hopelessly inadequate
**Invercargill**
Our workload has increased by about 10% each year for the last few years, particularly the acute load. It is becoming very busy out of hours and we have to find extra people/ open a second theatre more often.

**Taranaki**
We are already building a new larger hospital and have no idea where the extra staff needed are supposed to come from.

**Wanganui**
Not very confident. All theatres are being used to capacity now.

**Canterbury**
Present philosophy is a "bums on seats" model to deliver the theatre cases and this is affecting teaching training RMO recruitment negatively. Out of hours work by SMOs needs addressing and is a major cause of discontent.

- From the following list of options, please rate how useful you think each POTENTIAL SOLUTION would be in solving any problems related to the provision of anaesthetic services (either current or future) within YOUR Department/Service.

**Rotorua**
Treat them well, pay them well, work them well (i.e. "work hard, play hard, pay hard"). Keep interests alive and encouraged. I'm really not convinced about CRNA's in the current system, they're expensive, not necessarily permanent and not as good as a specialist anaesthetist.

**Counties-Manukau**
I would like to see nurses trained to do more complex tasks peri-operatively instead of PAs - nurses are already skilled and it would give them a better clinically related career structure. Need more audit assistance for research etc.

**Wanganui**
Medical council and Immigration must work more closely together and make it easier for OTS registration/work permit in NZ. At present they seem to be treated like criminals.

**Auckland City Hospital – Cardiac and ORL Anaesthesia**
The production line for cardiac surgery is often blocked by 1 component of the team not being available. At this moment in time this is Perfusion staffing shortages. Increasing Anaesthesia staff will not help in this context. CRNA's would not be appropriate in our environment.

**Auckland City Hospital – Level 8**
I see little benefit from Physician assistant because they will not have a sufficient range of safe practice - they would certainly be very dangerous in the periphery
Blenheim
Remuneration for availability and call back is grossly inadequate in provincial centres. More leave creates need for more locums who are not available or management refuse to fund. At present in a department of 4, we are potentially down 1 (25%) 32 weeks p.a.

Hutt Hospital
I just need the manager to increase my budgeted number of consultants.

Invercargill
Our best source of SMO’s is past registrars. I have had several express a desire to work here in recent years if they were to remain in NZ. They are all now employed in Australia.

Taranaki
Money is not the prime mover for most clinicians. Job satisfaction with adequate numbers of staff allowing appropriate leave is more valuable.

Wanganui
In the provincial areas, it is harder to recruit, and often although the graduates are excellent and provide safe anaesthetic practice, they are sometimes deemed to be not FANZCA equivalent. They depart for further training to the bigger centres never to return. This is frustrating and maybe we should look at the criteria for FANZCA equivalency especially as we are facing the real likelihood of nurse practitioners in Anaesthesia.

- Please comment of any workforce and related issues, not specifically addressed in this survey. Particularly if you feel they are relevant to assisting the NZSA with developing strategy and policy.

Hawkes Bay
Locum use in marginal departments e.g. Kaitaia, Grey, etc. is very wasteful of tax dollar and stifles development of these departments. Need to target these areas with increased salaries and other benefits.

Auckland DHB - SSSU
To keep SMOs in the DHB workforce the salary must be competitive compared with Australia and private practice.

Counties-Manukau
Aim for departments with primarily full time SMOs equals more cohesive department. Encourage the academic component by having appropriate audit/ research assistance and funding. This may help to recruit and retain staff, even if salaries are not as high as Australia.

West Coast
The way to attract SMO’s to the smaller rural DHB’s is to have a strong link with a neighbouring DHB. This can provide clinical attachments for skill maintenance (and interest), access to CME and Audit material/programs, and assist in leave cover.
There is a reluctance to offer enough money and also to make sure time can be taken to attend CME activities.

**Auckland City Hospital – Cardiac and ORL Anaesthesia**
Although we are almost fully staffed there is an impression that we do not get the applications we would expect due to the better offers coming in from Australia for Anaesthesia graduates. If we wished to increase our output even 25% let alone 50% this issue would reveal itself as much more significant.

**Waikato**
Work force planning is difficult. At times I have access to more trainees than I need and at other times not enough, similar situation with senior staff. Currently I am concerned that will have to turn good potential SMO's away which is at variance to the college workforce survey. However, because of intended work expansion will need to employ 2 to 4 people per year for next 5 years.

**Auckland – Level 8**
I truly believe salaries are a number one issue as we compete across the Tasman. Close second are conditions of service including the ability to expand ones career. There is no benefit in knowingly training high quality New Zealand graduates for the Australian market and replacing them with doctors from overseas. My understanding is the Australians have greatly increased the number of medical students and this may change the situation in a number of years.

**Invercargill**
I don't think using overseas trained SMO's is the best answer to our recruitment problem. We have lots of these people through and they can be great but there is a wide variation. The best solution is to be able to attract the people we have trained. Exposure to a situation like ours later in training would also help. You have to be a "jack of all trades" in all kinds of situations at least for a few hours (often this relates to ICU as well) and more senior trainees get isolated from this in the main centres where there are so many subspecialty rosters.

**Taranaki**
The country relies on IMG's to staff 40+% of the jobs. The current process is a travesty of due process, natural justice and logic. It is driving qualified people away. Not all of the country is a tertiary centre, the regions need special skill sets not necessarily found in ivory towers.

**Wanganui**
I would like to see special recognition of overseas graduates' vocational training to work in regional hospitals where tertiary services are not provided.
Appendix C – trainee survey data

Trainee Survey Data

- Where are you currently employed?

<table>
<thead>
<tr>
<th>Location</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auckland Region</td>
<td>39</td>
<td>59%</td>
</tr>
<tr>
<td>Waikato</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Capital-Coast</td>
<td>7</td>
<td>11%</td>
</tr>
<tr>
<td>Nelson</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Canterbury</td>
<td>11</td>
<td>17%</td>
</tr>
<tr>
<td>Otago</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Southland</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Undisclosed</td>
<td>4</td>
<td>6%</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>100%</td>
</tr>
</tbody>
</table>

- Where is your primary medical degree from?

<table>
<thead>
<tr>
<th>Location</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand</td>
<td>40</td>
<td>61%</td>
</tr>
<tr>
<td>South Africa</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>UK/Ireland</td>
<td>11</td>
<td>17%</td>
</tr>
<tr>
<td>Australia</td>
<td>4</td>
<td>6%</td>
</tr>
<tr>
<td>US/Canada</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>India</td>
<td>4</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Undisclosed</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>100%</td>
</tr>
</tbody>
</table>
- In your opinion, should Physician Assistants be used to provide anaesthesia in NZ?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Idea</td>
<td>1  2%</td>
</tr>
<tr>
<td>Bad Idea</td>
<td>51 77%</td>
</tr>
<tr>
<td>Uncertain/Indifferent</td>
<td>14 21%</td>
</tr>
</tbody>
</table>

- Why are you indifferent to the idea of PAs providing anaesthesia?

<table>
<thead>
<tr>
<th>Why do you think it is a bad idea for PAs to provide anaesthesia?</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would not have any effect on my practice.</td>
<td>0  0%</td>
<td>3  3%</td>
<td>1  1%</td>
<td>5  5%</td>
<td>5  5%</td>
</tr>
<tr>
<td>Do not plan to stay in NZ long term</td>
<td>1  1%</td>
<td>0  0%</td>
<td>3  3%</td>
<td>6  6%</td>
<td>4  4%</td>
</tr>
</tbody>
</table>

- If anaesthetic PAs were introduced in NZ prior to you commencing your anaesthetic training, how would this have affected your decision to train here?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No effect on my decision to train in Anaesthesia in NZ</td>
<td>35 56%</td>
</tr>
<tr>
<td>I would have trained in Anaesthesia in another country</td>
<td>22 35%</td>
</tr>
<tr>
<td>I would have stayed in NZ, but trained in another specialty</td>
<td>6 10%</td>
</tr>
<tr>
<td>I would have moved overseas and trained in another field</td>
<td>0% 0%</td>
</tr>
</tbody>
</table>
Appendix D – Comments relating to the trainee survey

Comments recorded from the trainee survey are shown below.

- Why do you think it is a good idea for PAs to provide anaesthesia?

I think that for a large number of low risk anaesthetics, appropriately medically supervised PA/nurse anaesthetists will be just as safe and effective as medically trained anaesthetists.

I think the issue has more to do with the relationship between anaesthetists and PAs than the training or background of the PA.

If the training is well conducted and well supervised I don't there will be an issue, but issues will arise if the PAs try to be cowboys or are able to practice unsupervised.

I think it's worth a try.

- Why are you indifferent to PAs providing anaesthesia?

Generally a good idea, nurse practitioners in UK do elective procedures, takes workload off surgeons

Not sure how it will affect trainees.

Apprehensive about an "Anaesthetist" who can only say "give arm blocks" to allow hand surgery = not always the best and safest option.

Unless there is a Specialist in charge, who would be the one looking after the patient's best interests?!

May be no need for Anaesthetic PAs as we already have nurses and technicians trained in the medical field for it.

If Level of Supervision is 1 to 1, they could be an enormous help and no threat at all. A bit like have a good registrar working with you.

Bad idea to introduce yet another type of worker into the medical arena - someone whose career aspirations will not necessarily end in their current role and this is the thorny bit. We are going to have to live with these decisions for ever.

- Why else would having Anaesthetic PAs who administer anaesthesia be a BAD idea?

No decrease in overall cost (6 responses)
Less exposure/experience for registrar (6)

PAs have less actual medical/anaesthetic training and insufficient medical knowledge/judgement (6)

Concerns about having to train/supervise non-medical practitioners (5)

Patients at greater risk of harm (5)

Emergencies still occur in ‘healthy’ patients (4)

Devalue service we provide / lower our standing amongst colleagues / reduction of public opinion of our specialty (4)

Concern this will be similar situation as in obstetrics (3)

This is cost-saving measure rather than to improve standard of health care (3)

Affect teaching of registrar (3)

Open to abuse/bullying by other OT staff (e.g. surgeon) due to power imbalance – may not be able to act as patient’s advocate (2)

More registrar positions instead of training new anaesthesia providers (2)

Brain drain will still occur, and will now include PAs (2)

Decreased job satisfaction (2)

PA role will be attractive to other health practitioners (e.g. ICU nurses, techs, OT nurses) – who replaces them? (2)

PAs are not going to work in the places that anaesthetists don’t want to work either (2)

Unsuitable for remote areas (where shortages are) due to lack of supervision (1)

Increased motivation to move overseas after anaesthetic training completed (1)

Mistakes made will taint reputation of anaesthetists due to poor public understanding (1)

PAs should instead be placed in areas where outcome is not so severe for mistakes (1)

Anaesthesis less attractive as a career to junior doctors (1)

Increased fractionating of healthcare by introducing another provider (1)

Difficulty communicating medical ideas effectively with other anaesthetists (1)
PAs may come from non-health background (1)

**Some expanded trainee comments are provided below:**

**Expanded Trainee Comment 1**

Has been trialled in the UK. Proposed benefits: (1) list efficiency, (2) frees up consultant to teach, (3) cheaper, (4) removes mundane tasks so trainees can learn other novelties.

**Realities:**
1. List efficiency - possibly, but PAs work in lists for ASA1&2 patients only; Trainees should be used to do these as solo lists, honing their practice, applying what they have learnt, learning how to become a consultant one day.
2. Consultant dilemma is who to teach?: the PA who is employed as a permanent member of the department or the trainee there for only a few months who may never to be seen again - guess who ended up getting the training.
3. PAs in the UK are paid more than trainees per hour - PAs work M-F 8am-5pm only.
4. Some of mundane tasks are the bread and butter of anaesthesia e.g. basic airway management - anaesthetists make such tasks look mundane and easy only because we practice them every day.

**Expanded Trainee Comment 2**

Someone would have to train them, and since they are not doctors I would not feel comfortable having to train them.
And who would supervise them? Having to supervise and be ultimately responsible for non-medically trained staff consideration. This would seriously impact on where I would choose to practise. Administering anaesthesia is surely a fraught area and one that would need very careful consideration.

They would also be a bad idea because we would train them in this country and then they would disappear elsewhere to earn considerably more than registrars in this country and probably more than some consultants. PAs are not the answer. We must not allow this to happen.
Once a patient has ANY form of anaesthesia in modern medicine, they are at risk of airway disaster, ventilatory disaster, cardiovascular disaster, neurological disaster, multi-organ failure, and not least, psychologically affected.
May I ask the Minister: Do you want your completely healthy and well teenage child to be given an anaesthetic by a PA knowing all the risks, although small, but potentially with catastrophic consequences? If every minister lets their well teenager be anaesthetised by a PA then I don’t see a reason why we shouldn’t have PAs.

**Expanded Trainee Comment 3**

Many "registrar lists" will be delegated to PA's (who as they gain experience may do a better job than a junior registrar).
In theory this could mean juniors are more free to complete their modules but departments would be run with less trainees, meaning more service provision (after hours work) rather than improved learning opportunities. This will impact on workforce planning as less trainees mean less consultants for the future and an inability to then run OT without PA's, and an eventual situation where essentially as a consultant you run around trouble shooting 4 PA's with little direct patient contact/anaesthetic provision. This is not a job I would want.

As they gain experience, PA's would take on harder cases, with greater independence until the situation is essentially "nominal supervision". A short cut to becoming an ‘anaesthetist’. This is a slippery slope of short-term cost saving resulting in future loss of healthcare provision.