Australian
Society of Anaesthetists

SUBMISSION TO THE PRODUCTIVITY COMMISSION FROM THE AUSTRALIAN SOCIETY OF ANAESTHETISTS

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The Australian Society of Anaesthetists (ASA) notes with interest that the Productivity Commission is to undertake a study detailing and explaining the impact of advances in medical technology on health care expenditure in Australia. The fact that the Commission has defined "medical technology" in broad terms, including not only equipment and pharmaceuticals, but also clinical procedures, and knowledge and support systems, is acknowledged.

The ASA contends that there have been significant increases in anaesthesia productivity over the past two decades. The resulting financial gains to the Australian community have been studied (see below) and been shown to be enormous.

Anaesthesia services have been shown to be required for a large (and increasing) percentage of hospital admissions. The continuing increases in anaesthesia productivity which can be expected, as a result of ongoing research into all aspects of anaesthesia service delivery, will continue to have further beneficial effects on the delivery and costs of health care delivery in this country.

QUANTIFICATION OF PRODUCTIVITY GAINS IN ANAESTHESIA

In an attempt to quantify the monetary savings referred to above, Access Economics Pty. Ltd. (Canberra)[1] was commissioned by the ASA to study the issues involved. Their report concluded that over the prior two decades, the savings due to advances in anaesthesia alone (not including advances in surgical techniques) amounted to approximately $34 billion.

The study involved assessment of changes in practice related to 75 procedures listed in the T8 section of the Medical Benefits Schedule (MBS). They were chosen on the basis of the high aggregate dollar value of the benefits paid (34% of all MBS benefits paid out on surgical items in 1996-97), and the high incidence of anaesthetist involvement. Examples of just some of the savings identified follow.

A very significant shortening in both the average length of stay (ALOS), and post-operative recuperation time, was shown for the surgical items covered by the survey.

[1] See Reference 1

TABLE 1: IN-HOSPITAL ACCOMODATION SAVINGS [2]

Current compared with	Total savings ($m p.a.)	Savings attributable to advances in anaesthesia ($m p.a.)
5 years ago	255	100
10 years ago	580	225
15 years ago	780	300
20 years ago	975	370

The study found that if similar reductions in ALOS had been achieved across all T8 surgical items, the total savings compared with 20 years earlier would have been of the order of $2.5 billion per annum, with anaesthesia estimated to have contributed $1 billion p.a. of this.

The study also estimated the monetary benefits to the community from the faster recuperation periods observed, by valuing the number of days of fully functional life gained at average daily earnings.

TABLE 2: COMMUNITY BENEFITS FROM FASTER RETURN TO A FULLY FUNCTIONAL LIFESTYLE AFTER SURGERY [3]

Current compared with:	Savings in the post-separation period ($m p.a.)	Savings in the full surgical episode period ($m p.a.)*
5 years ago	150	205
10 years ago	327	450
15 years ago	500	660
20 years ago	560	765

If similar reductions in recuperation periods had been achieved across all surgical items, the total savings compared with 20 years earlier would have been of the order of $1.4 billion p.a., with anaesthesia estimated to have contributed $0.5 billion p.a. of this.

* Kilham notes that one could argue that the benefit to the community from faster return to a fully functional lifestyle should be calculated with respect to the entire health care episode, and not just the recuperation period following discharge from hospital. The final total savings estimate of $34 billion uses the lower figure and could therefore represent an underestimation.

EXTENT OF ANAESTHESIA PRACTICE

Statistics from the Australian Institute of Health and Welfare (AIHW) show that a large number of hospital admissions are associated with a procedure (see below). “Procedure” is defined here as a clinical intervention which is surgical in nature; carries a procedural risk; carries an anaesthetic risk; requires special training, and/or requires special facilities or equipment only available in an acute care setting. Most such procedures are associated with an anaesthetic service. “Separation” is defined as a total hospital stay, or a change from one type of care to another (eg. acute to rehabilitation), or the process by which an admitted patient completes an episode of care (discharge, death or transfer).

[2] Reference 1, P 16
[3] Reference 1, P 27

The incidence of same day separations from hospital has continued to show a gradual increase, and the ALOS figures a gradual decrease. As expected, the percentage of admissions involving a procedure, and the percentage of same day discharges, is higher in the private sector.

TABLE 3: PUBLIC HOSPITALS

Year[4]	% of Separations Having Procedure	% of Same day Separations	ALOS (days) – all procedures
1998-1999	72.0	44.5	4.2
1999-2000	72.8	52.0	4.2
2000-2001	72.6	52.0	4.1
2001-2002	72.1	54.9	4.1
2002-2003	73.3	54.1	4.0

TABLE 4: PRIVATE HOSPITALS

Year[4]	% of Separations Having Procedure	% of Same day Separations	ALOS (days) – all procedures
1998-1999	88.0	54.8	3.2
1999-2000	88.6	60.0	3.1
2000-2001	89.2	61.9	3.1
2001-2002	90.3	63.2	2.9
2002-2003	90.5	64.3	2.8

The continuing trend of increasing incidence of day surgery and reduced ALOS is substantially a result of improved anaesthesia practice (as discussed in the Access Economics Report). These changes in practice have resulted in an enormous increase in productivity allowing a more efficient and safer delivery of health care to the public.

Given the results displayed in Table 1, namely the enormous savings gained (specifically by anaesthesia practices) by earlier hospital discharge, a continuing increase in productivity and decrease in costs since the completion of the Kilham study can be assumed.

ACHIEVING PRODUCTIVITY INCREASES

Advances contributing to an increase in productivity have been made at all stages of the anaesthesia process. Significant advances have been made both in the more technical aspects of anaesthesia care (eg. equipment, pharmaceuticals), as well as in methods of delivering anaesthesia services (eg. increases in day-of-surgery admissions, and same day discharges).

TECHNICAL ADVANCES

Equipment

[4] Details extracted from Reference 2 to 6.

Advances here have essentially been aimed at increasing patient safety during (and after) surgical procedures, but have also contributed to cost savings.

The rapid and continuing development of electronic and computerised equipment over recent years has had as much of an impact in the field of anaesthesia as it has in other sections of the community. Anaesthesia delivery systems have become far more sophisticated, as has the ability of the equipment used to monitor its own performance. For example, the use of anaesthetic agent monitors which can accurately measure the concentration of each gas in an inhaled mixture is now standard, helping to prevent not only dangerous accidental overdoses, but also accidental underdoses with the risk of patient awareness during surgery. Anaesthetists now have the ability to administer powerful inhalational and intravenous agents more accurately and with a greater degree of safety, and the incidence of adverse effects, and recovery times, have also been improved as a result.

Devices used to monitor patient physiological variables (eg. cardiovascular performance, oxygen and carbon dioxide level) have also become increasingly sophisticated and accurate, allowing problems to be detected earlier and safety profiles to be improved.

Pharmaceutical Agents

Newer drugs with better therapeutic to adverse effect ratios have been and continue to be introduced into anaesthesia practice. Intensive research both at the basic science level (biochemistry, pharmacology, etc) and by anaesthetists actually using and assessing such drugs has been required.

The motivation for introduction of newer drugs is not only improved patient safety, but also better, faster and more comfortable patient recovery, and hence earlier discharge, earlier return to normal lifestyle etc. As a result, productivity improvements have already been shown, and research at all levels is of course ongoing, with the virtual certainty of further improvements.

ADVANCES IN PRACTICE METHODS

Pre-Anaesthetic Assessment

Over the last decade or so in particular, increasing numbers of patients have been receiving an assessment by an anaesthetist well before their planned admission to hospital. This is particularly notable in the public sector, with the widespread establishment of specific pre-anaesthetic outpatient clinics. In many institutions, pre-admission assessment is achieved in 100% of elective patients. Such assessments are also being increasingly seen in the private sector also, but not yet to the same extent. The extremely poor MBS rebate for the pre-anaesthetic consultation (MBS item 17603, $30.95) is seen as being a significant barrier here.

The pre-admission anaesthetic consultation has resulted in a tremendous decrease in the number of patients being admitted to hospital prior to their planned procedure. In the past, almost all patients, even those undergoing relatively minor procedures, spent at least one night in hospital before surgery. The objective of early admission was essentially to ensure adequate pre-operative assessment and preparation.

A pre-admission assessment also allows the anaesthetist to order investigations which are specific to the needs of an individual patient (blood tests, Xrays etc.). In the past, many such investigations would be ordered *en masse* by the surgical team, often unnecessarily and at significant cost.

Even with overnight admission and extensive ordering of tests, many patients would have their procedures cancelled for safety reasons, on the basis that their co-existing medical problems had not been adequately controlled. Pre-admission assessment allows time for measures to be taken to prevent such outcomes, including referral to other medical specialists where appropriate. Patients with significant co-existing disease, undergoing complicated surgery, can frequently be admitted on the day of surgery.

Day Surgery

Many surgical procedures which in the past resulted in postoperative admission to the hospital ward are nowadays being performed in day surgery units. Advances in both anaesthetic and surgical techniques have contributed to this. Again, much research and development work by anaesthetists has been required.

Administration of Anaesthesia

The actual clinical performance of anaesthetic procedures has advanced in numerous ways over recent years. An obvious example is the more frequent use of local anaesthetic procedures, with or without sedation, and resultant avoidance of general anaesthetics, which despite the fact that vast improvements have been made, still maintain lower safety margins, higher incidence of adverse effects, and slower recuperation and recovery profiles.

SUMMARY

There is strong evidence that advances in anaesthesia technology, at all stages of the treatment process from pre-operative assessment through to recuperation and discharge, have resulted in large productivity increases and enormous savings to the Australian community over the last twenty years, and particularly the last decade. Ongoing research into newer techniques, aimed at improving safety profiles as well as overall health outcomes, can be anticipated to continue this trend.

Savings generated for the Australian community by its anaesthetists in the twenty years prior to 2001 amounted to approximately $34 billion.

At the same time, rebates for anaesthesia services in the private sector have failed year after year to keep pace with the rising costs of practice, and are the worst for any medical speciality. Anaesthetists staffing our public hospitals, who perform almost all of the clinical and administrative research and development tasks, are compensated at a level well below their true worth to the community.

The Australian community can expect that its anaesthetists will continue to attempt to find newer, better and more cost effective ways of performing their tasks, simply because anaesthetists by their very nature are highly motivated to provide an excellent service. Research and development tasks are an essential part of ensuring such excellence. However, even better results might be achieved if there were at least some incentives in place other than the satisfaction of a job well done. The poor rebate for out-of-hospital pre-anaesthetic assessment is an obvious point. This specific issue is being vigorously pursued by the ASA, not only from the point of view of fair compensation for services provided, but also as pre-admission assessment is already a proven quality assurance and cost saving measure. The ASA will continue to lobby on behalf of its members for fair financial recompense for all of their services, given the proven vast financial benefits anaesthetists have already provided to the community they serve.

REFERENCES

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