“Access to safe surgery and anaesthesia when needed”

Advancing the Agenda on the Global Burden of Surgical Disease – we need to measure the Perioperative Mortality Rate (POMR)

A meeting was held in the RACS Council room in March to reach consensus on whether and how to measure perioperative mortality. The participants included Councillors of the Royal Australasian College of Surgeons (RACS), Australian and New Zealand College of Anaesthetists (ANZCA), and Australasian Society of Anaesthetists (ASA) together with representation from the World Federation of Anaesthetists (WFSA), Tonga, the Cook Islands and Physicians active in public health.

The meeting recommended that all countries report Perioperative Mortality Rates for death on the day of surgery and death before discharge from hospital if less than 30 days postoperative.

Background

The unmet burden of surgical disease is substantial. Currently two billion of the world’s population does not have access to emergency and essential surgical care. Each year this results in an estimated 70,000 unnecessary maternal deaths (25 per cent of 280,000 per annum), 175,000 excess deaths from road traffic accidents (25 per cent of 750,000 per annum), and 35,000 avoidable anaesthetic deaths (1:500 in 35 million operations).

Trauma and non-communicable diseases (NCDs) comprise the major causes of death globally. Accidents and injuries represent the leading cause of death and disability in economically active adults aged 15-44 years, an age group that carries heavy family responsibilities. There is also a pandemic of non-communicable diseases affecting older patients, with cardiovascular and cerebrovascular disease, diabetes and cancer constituting the leading conditions, and increasing numbers likely to require surgery at some stage as their condition progresses.

Considerable improvements in maternal mortality and other maternal health outcomes have been achieved through better access to skilled birth attendants and attention to the fifth Millenium Development Goal (MDG5). However, as suggested by the estimated 70,000 deaths related to lack of maternal access to safe surgery and anaesthesia, further significant reductions in maternal mortality will only be achieved by also addressing the up to 25 per cent of pregnancies that require a procedure and/or anaesthetic to avoid injury, deformity or death of the mother and/or child.

Safe surgery and anaesthesia are not unaffordable luxuries only for rich countries. They should be seen as a basic human right, and their lack represents a significant cost in terms of life and disability to the communities that cannot access them. An increasing number of studies suggest that surgery and anaesthesia can be delivered in Low and Middle-Income Countries (LMIC) effectively and inexpensively, often at a similar cost ($11-35 per Disability-Adjusted Life Year [DALY] averted) to measles vaccination, vitamin A supplementation or bed nets to prevent malaria. The surgical management of injuries, infection, obstetric and abdominal emergencies and many deformities is, therefore, cost-effective and potentially deliverable for all.

Consensus Reached

The meeting also agreed that the one-liner “Access to safe surgery and anaesthesia when needed” embodied our message to the profession, to the public, to governments and ministries. It was originally recommended by the organising committee of the Global Burden of Surgical Disease Symposium held at the RACS September 27-28 2012, under the auspices of RACS, ASA, The Alliance for Surgery and Anaesthesia Presence (ASAP), the Harvard Humanitarian Institute (HHI) and the International Surgical Society (ISS).

The one liner’s advantages are it avoids being a slogan, is inclusive of surgery and anaesthesia, and covers the concepts of essential and emergency surgery with ‘when needed’, though this idea might sometimes require explanation. It is agnostic of whether surgery and anaesthesia are delivered by specialists or not, but highlights the right of patients to safe delivery of each.

The meeting agreed that perioperative mortality rate (POMR) is an indicator of both safety and access.

Though it might be perceived as primarily an indicator of safety, it is also a measure of access since the number of procedures performed must be known to calculate it. Lack of access resulting in delayed presentations will lead to higher mortality as well as fewer procedures. Thus POMR reflects the system’s responsiveness to primary and secondary care issues – its capacity to deliver.

There was consensus that WHO’s existing metrics on perioperative mortality should be used. These are: Death on the day of a procedure (within 24 hours/same day as procedure), and; Death after commencement of a procedure and before discharge from hospital if less than 30 days.

A procedure was defined as a procedure performed within an operating facility which requires the administration of sedation or anaesthesia whether local, regional or general.

Perioperative mortality rate requires the number of deaths and the number of procedures to be counted. In practical terms most operating rooms count the number of procedures, at least with an operation registry. It will require some form of follow up of patient progress in the wards to identify which patients die before discharge.

Although there are other measures of mortality such as death within 48 hours of a procedure and anaesthetic, death within 30 days, and death under the bedcard of a surgeon, these are more difficult to collect and would be challenging to collect in many LMICs. These metrics should be regarded as optional extras for countries with the capacity and desire to collect, analyse and report them. LMICs will not be able to follow patients up consistently after discharge for 30 days.

Risk stratification is desirable to clinically interpret perioperative mortality. Not every country would be able to collect these and the burden of recording is greater, but they are to be recommended and will be required for clinicians (surgeons, anaesthetists and public health physicians) to be convinced.

The risk stratification data recommended are simple to collect and do not require any laboratory tests to assess: age, urgency (elective or emergency), procedure and ASA status. ASA status was discussed and considered to be simple, accepted for over 50 years and quite applicable to LMICs as well as to G20 nations. Anaesthesia providers everywhere can be taught to use ASA.

A procedure should ideally be counted as the first procedure that a patient receives during an episode of care. A procedure should only count towards a death once, rather than twice or more where a patient dies after an unplanned reoperation. Ideally it should only be the first procedure that is counted.

Next steps

The workshop then turned its attention to the task ahead. This will be a sustained campaign of advocacy, persuading governments, ministries of health, hospitals and clinicians of the value of POMR as a tool to improve patient outcomes and ensure the most appropriate allocation of resources.

One of our immediate aims is to put the global burden of surgical disease and the value of POMR firmly on the agenda of the World Health Assembly.

Those in positions of authority across the world must be repeatedly reminded of the fact that timely access to safe surgery and anaesthesia will save millions of lives and avert much disability.

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