

Even if we restrict our focus to the small group of young people that the protocols are designed to protect—those at risk of harm—it is still not clear that these changes will be effective. Following the introduction of mandatory reporting in the US and some parts of Australia, it remains unclear whether it has improved services to young people. Such rules have increased the number of reports to social services, but there is no clear evidence on whether vulnerable young people are getting the help they need. Indeed, the increase in workload may even have prevented social workers from dealing with genuine cases of abuse.¹¹

Protecting young people sometimes makes it necessary to disclose information without their

consent. But a blanket demand for mandatory reporting is too blunt an instrument and will prevent many young people from seeking help in the first place. It is difficult to see how these protocols can do anything but harm the interests of some of the most vulnerable people in our society, precisely those young people they are designed to protect.

Ruth Bastable *general practitioner*

Cambridge Access Surgery, Cambridge CB5 8HA

Julian Sheather *senior ethics adviser*

BMA Medical Ethics Department, London WC1H 9JP
(jsheather@bma.org.uk)

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β blockers for patients at risk of cardiac events during non-cardiac surgery

Anaesthetists should wait for better evidence of benefit

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More than a million patients each year develop cardiovascular complications arising from non-cardiac surgery in the United States alone, and effective strategies and interventions to reduce perioperative cardiac morbidity are badly needed.^{1,2} The best perioperative outcomes for patients at such risk depend partly, as always, on taking a good history, completing a relevant clinical examination, and ordering appropriate investigations.³ But the best strategies for protecting high risk patients from cardiac ischaemia during surgery are still not clear.

One issue—the use of perioperative β blockers—is particularly controversial, and a systematic review and meta-analysis by Devereaux et al published recently in the *BMJ* sheds further doubt on previous evidence.⁴ Unlike many previous studies, which have found that perioperative β blockers reduce the risk of major cardiovascular events, this meta-analysis concludes that the evidence is encouraging but too unreliable to allow definitive conclusions to be drawn.⁴

This analysis by Devereaux et al includes 22 clinical trials, all published, in which 2437 patients were randomised.⁴ Thus it is considerably more comprehensive than previous reviews by Auerbach and Goldman⁵ and Stevens et al,⁶ which included five and 11 trials, respectively. These authors have reported, albeit with some caveats, that perioperative β blockade reduces mortality, with numbers needed to treat of

3-8⁵ and 32.⁶ These reviews, and treatment recommendations based on them, may have been inadvertently biased.⁶⁻¹¹ Studies that seemed to confirm conclusively the benefit of perioperative β blockade may have coloured our reasoning¹⁰ and led to earlier studies being left out of systematic reviews. Furthermore, one study¹ was a long term follow-up of patients already included in another trial¹⁰ and did not include an analysis by intention to treat. Although the new meta-analysis by Devereaux et al raises uncertainty about the benefits of perioperative β blockers, it endorses the drugs' overall safety.⁴

The drugs used in the 22 trials included eight different β blockers administered by different routes and methods (oral, oral slow release, intravenous bolus, and infusion). Drugs were started up to two weeks before surgery and as late as the start of anaesthesia. The duration of treatment varied from a single dose of a short acting agent to several weeks.⁴ But this heterogeneity in treatment does not explain the disparity between the findings of this meta-analysis and those of previous systematic reviews and clinical practice guidelines.

The observational study by Redelmeier et al in this week's *BMJ* confirms, however, the extra benefit

conferred by the use of a long acting β blocker (atenolol) over a shorter acting one (metoprolol).¹² The study is not randomised and would not have been included in the meta-analysis by Devereaux et al.⁴ It examines the effect on cardiac outcomes of different β blockers in the perioperative period for patients older than 65 having inpatient, non-cardiac surgery. This paper's findings are important for two reasons.

Firstly, the paper identifies the increased ability of perioperative atenolol over metoprolol to reduce the risk of perioperative myocardial infarction and death in these patients.¹² This finding should inform the development of new guidelines on perioperative β blockade for non-cardiac surgery if the forthcoming POISE (PeriOperative ISchaemic Evaluation) trial, which is already under way, confirms a beneficial effect.^{w1} Secondly, the paper by Redelmeier et al¹² raises the possibility that the mechanism for the increased myocardial infarction and mortality in the patients who had metoprolol is related to acute withdrawal of the short acting β blocker owing to missed doses.

This explanation of the observed difference between the two drugs in this context requires us to accept two theories of causation. These are that acute withdrawal of β blockade increases the risk of cardiac events and death in elderly patients having non-cardiac, inpatient surgery. The other theory is that such withdrawal arises from lapses in health care and omission of short acting β blockers in the perioperative period, hence the reported differences in the rates of cardiac events and death between patients who had metoprolol and atenolol. This explanation is very plausible and has been identified before.^{w2 w3} The contribution of medication errors to excess deaths underscores the need to improve the safety and quality of care delivery in all complex healthcare systems.^{w4} A question not posed in the paper but posed by the results is: "Should long acting drugs be used whenever possible in complex healthcare environments simply to reduce the occurrence of errors of omission?" The answer may well be yes.

Because anaesthesia encompasses preoperative assessment, perioperative treatment, and postoperative management, anaesthetists should, perhaps, be renamed perioperative physicians. But the science of perioperative medicine still has much to do to achieve practical benefits in the practice of anaesthesia. Several important lessons for perioperative physi-

cians arise from the evolution of this knowledge on β blockers.

Firstly, anaesthetists should wait for conclusive evidence from the POISE trial of benefit in defined groups of patients before recommending β blockade at the time of non-cardiac surgery. Further research evidence is needed on optimal regimens of β blockers, along with dosing schedules, duration, and timing of treatment to achieve the best outcomes for patients and to develop practical strategies for using such regimens.² Lastly, systematic reviews and meta-analyses should drive the design of similar studies on the effects of statins, β adrenergic receptor agonists, and combinations of drugs that are thought to protect the heart during the perioperative phase for patients having non-cardiac surgery.^{w5-w7}

Stephen Bolsin *director*

(steveb@barwonhealth.org.au)

Mark Colson *specialist anaesthetist*

Division of Perioperative Medicine, Anaesthesia and Pain Management, Geelong Hospital, Geelong, Victoria 3220, Australia

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