

## EDUCATION, TRAINING AND LEARNING

# The value of personal professional monitoring performance data and open disclosure policies in anaesthetic practice: a case report

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A case is reported in which routine detailed trainee performance monitoring data collected as part of a personal professional monitoring programme were used to help justify to a patient and relatives the unforeseeable nature of a rare complication of a procedure. The data also supported the decision to allow the trainee to undertake the procedure. The personal professional monitoring programme conforms to the highest standards of clinical governance for trainees, consultants, departments, hospitals, and professional colleges. Data from the programme are fed back to the trainees and used to guide training requirements and to provide objective evidence of trainee assessments, practical ability, and competence.

### CASE REPORT

#### Clinical course

An 81 year old patient presented for coronary artery surgery after a coronary angiogram demonstrated triple vessel disease with mildly impaired left ventricular function. Aspirin had been ceased 6 days before the operation. Preoperative investigation showed normal coagulation studies in the presence of mildly abnormal liver function tests. The patient was not taking any complementary medicines and was admitted on the day of surgery having been assessed in the preoperative clinic 5 days previously.

Premedication was with temazepam 10 mg orally. A 14G cannula was inserted in the right forearm and a 20G cannula in the right radial artery after midazolam 2 mg intravenously. A pulmonary artery catheter sheath was inadvertently inserted into the right carotid artery. The sheath was removed and pressure applied to the puncture site. Over the next 10 minutes the patient developed a large expanding haematoma in the neck, increasing distress, and dyspnoea from acute upper airway obstruction.

An inhalational induction of anaesthesia with Sevoflurane and an anterior cervical plexus block with 2% lignocaine and adrenaline was performed. The neck haematoma was decompressed and a tracheostomy inserted. Oxygen saturation was maintained above 90% throughout the procedure. A 5 lead ECG showed no ST segment changes. An ultrasound scan of the neck showed patent right common and internal carotid arteries. The right internal jugular vein was either compressed or absent. The patient made an uneventful recovery and the tracheostomy was removed the next day.

The rising costs of medical indemnity premiums are a feature of many healthcare systems.<sup>1–3</sup> There is an opinion that these rises are inexorable and cannot be influenced by medical practitioners or healthcare managers.<sup>2</sup>

Open disclosure policies have been proposed by some organisations to reduce the potential for damaging litigation.<sup>4</sup> In cases of medical misadventure or medical or systems error, such policies may reduce the financial cost to which an organisation is exposed.<sup>3</sup> The collection of data on procedural performance by anaesthetic trainees has recently been described.<sup>5</sup> Such a record provides more valuable information than a simple log book by recording success or failure in completing a particular procedure.<sup>5–7</sup> It provides performance data for each trainee, allowing them to monitor their success rates and document improvement or deterioration in performance. Possibly of greater importance is the ability to provide group data on performance which allows the medical profession to achieve—or even exceed—the high standards set in the Australian High Court judgement of Justice Michael Kirby in the Chappel v Hart case.<sup>8</sup> This judgement stated that, for full informed consent, a patient should be provided with not only the success or complication rate of the proceduralist but also the success or complication rates of other practitioners undertaking the procedure. The features of the personal professional monitoring programme are shown in box 1.

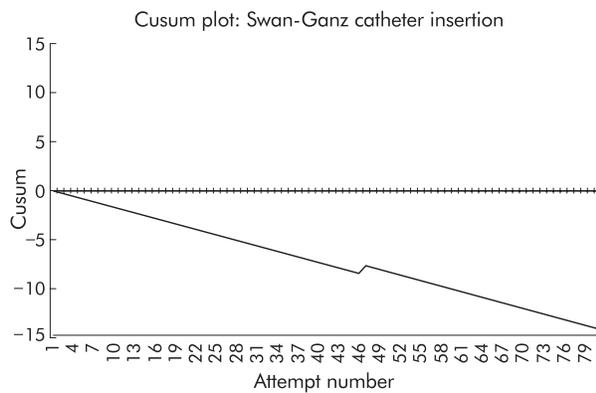
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#### Box 1 Features of the personal professional monitoring programme

- Trainees will collect performance data
- The data provide individual complication rates
- The data provide group complication rates—for example, 1st year registrars or consultants
- The data are used to guide training
- The data can be used to inform patients of likely complication rates
- Performance charts can be used to reassure patients
- Trainees will report "near miss" incidents
- The data generated conform to the highest standards of clinical governance



**Figure 1** Performance chart of trainee for Swan-Ganz catheter insertion showing 46 insertions with no failures and no complications. Performance after the patient described in this paper (insertion 47) continued to be complication free, indicating no change in the overall performance of the trainee. The horizontal axis is a statistical conversion of the cumulative failure rate over the series of procedures in which movement of the performance graph spanning two horizontal lines represents a statistically significant change in the performance of the anaesthetist (upward crossing of two horizontal lines documents statistically worse performance; downward crossing of two horizontal lines documents statistically better performance).<sup>12</sup>

The following week the patient underwent coronary artery bypass grafting. A Swan-Ganz catheter was inserted into the left internal jugular vein under ultrasound guidance. The anaesthetic and surgery were uneventful. The postoperative course was complicated by atrial fibrillation and cellulitis of the saphenous vein harvest site, both of which resolved.

### Legal course

After the initial decompression and tracheostomy a discussion with the family provided the information that the complication experienced by the patient was a very rare but reported complication of internal jugular vein cannulation occurring in <1/5000 CVP insertions. The initial response of the family was an angry denunciation of the standards of clinical practice within the hospital and a criticism of the Division of Perioperative Medicine for allowing a trainee to jeopardise the life of the patient. This was expressed verbally, and also as a request for information about the person to address in order to initiate a complaint against the hospital and the trainee concerned.

The clinicians involved in the case examined the trainee's record for central venous line insertion and also the trainee's record of pulmonary artery catheter insertion which had been entered separately on the personal professional monitoring programme.<sup>5</sup> The implications of disclosure of the performance record were then also discussed with the trainee and the specialists managing the case. The very low complication rate for both central venous line insertion and pulmonary artery line insertion in the trainee's hands indicated that open disclosure would help to justify the decision that the trainee

should be allowed to insert the line in this case (fig 1). This decision was made with the involvement of the trainee in the discussion.

After disclosure of the trainee's record to the family, including the performance chart (fig 1), there was an immediate and dramatic change in the opinions of the family. The senior family members understood that the record for the trainee indicated that the decision to allow him to insert the pulmonary artery catheter had been made on the basis of valid performance data and was entirely justified. They also then understood more clearly that the sequence of events represented an unfortunate misadventure that could have happened in the hands of any experienced anaesthetist. They were also so impressed by the quality and clarity of the data from the personal professional monitoring project that they requested information on the person to address compliments about a clinical service. They wished to compliment the anaesthetic service for the quality of the data collected and the use to which it was put. This experience is in line with other open disclosure reports.<sup>4</sup> The patient was very happy to give written consent for her case to be submitted for publication.

### DISCUSSION

There is no doubt that provision of the procedural performance data of the trainee anaesthetist addressed the concern of the family about the competence of the anaesthetic management. Conversations with the relatives subsequent to the provision of this information confirmed this observation.

### Financial implications

The estimated costs for an initial patient complaint were obtained from a local medical indemnity organisation and estimated to be £4000 (US\$6000) for the first contact from a solicitor representing a patient or relatives. Subsequent contacts are estimated to be of the order of £2000 (US\$3000). The total estimated costs for a case of this nature not going to court were £4000–12 000 (US\$6000–18 000) (Mark Valena, CEO Medical Defence Association of Victoria, personal communication).

The Department of Perioperative Medicine in the Geelong Hospital undertakes about 16 000 anaesthetic procedures a year and has the only accredited acute and chronic pain service in the state of Victoria. There are 11 full time consultant anaesthetists, 24 part time consultants, and 12 ANZCA accredited registrars providing anaesthetic services.

The cost of providing this programme to all ANZCA accredited registrars in the anaesthetic department for 3 years was £5400 (\$10 800). The ongoing cost of the programme for the trainees in the department is £1800 (\$3600) per annum. Thus, a minimum of 50% of the initial cost of providing the personal professional monitoring programme to the department was recouped inside the first year in dealing with this one case from a single trainee.

An additional attraction to indemnity organisations of this type of information is the ease of defence of subsequent claims if litigation is pursued. The indemnity organisations anticipate that the ability to provide individual performance data from clinicians accused of substandard or negligent practice would

**Table 1** Illustrative costing

	£	(US\$)
Cost of programme (year 1 subscription)	150	(300)
Registrars in department (12)	1800	(3600)
Subscriptions for 3 years	5400	(10800)
Hardware costs: 12 devices @ £320 (US\$480) (devices on loan from department)	3840	(5760)
Total cost for 3 years	9240	(16560)

be important for two reasons. It would not only refute any evidence of systematic poor practice, but also demonstrate to the plaintiff and the court that the doctor was committed to monitoring and reflecting on data about personal procedural performance (Mark Valena, CEO MDAV, personal communication).

An illustrative costing is shown in table 1.

### Management implications

The clear lessons from this case are that healthcare managers, health service administrators, medical indemnity organisations, and hospital boards will benefit from encouraging collection of performance data. The data conform to the highest standards of clinical governance and ensure high quality training and supervision. This level of clinical governance is achieved by documenting, analysing, and feeding back performance data to both trainees and their supervisors. Changes in performance are detected early and prevent (by reducing the occurrence of) adverse events that would cause patient harm in the unmonitored situation. The ability of the programme to facilitate critical incident reporting has led to a "near miss" incident reporting rate of 1.5% by anaesthetic registrars in Australia. The numerator and denominator data are available from the programme as the number of "incident free" anaesthetics is recorded as well as the number of anaesthetics in which actual incidents of patient harm or "near miss" incidents occur. This type of incident reporting is the most valuable in reducing future adverse events and preventing patient harm.

### Professional implications

Other benefits of the programme include a log book of caseload and procedures undertaken for the participating registrars, improved safety through incident reporting with numerator and denominator data for critical incidents, and a register of procedures for the speciality from the integrated data collection.<sup>5</sup> There is also evidence that registrars continue to collect their performance data and the programme encourages cultural change in the behaviour of anaesthetic trainees which is maintained into specialist practice.<sup>6,7</sup>

The Australian & New Zealand College of Anaesthetists (ANZCA) has approved the granting of the maximum annual number of quality assurance points in the Maintenance of Professional Standards (MOPS) programme to specialists providing evidence to the College of participation for 1 year in the personal professional monitoring programme. This far sighted decision provides College encouragement for the continuous collection and review of performance data in specialist anaesthetic practice in Australia.

### Future implications

The widespread adoption of personal professional monitoring programmes by both trainees and specialists would dramatically reduce the number of adverse events occurring as complications and failures of practical procedures. These have been estimated to occur at a level of about 35%.<sup>9</sup> The mechanisms of the reduction are related to several components of the programme.

### Feedback of performance data

The provision, via a secure server, of personal performance data allows trainees to monitor their performance and seek help if performance deteriorates. The sharing of the same data

with supervisors of training ensures that training is tailored to trainee need and minimises the exposure of patients to trainees whose performance is more likely to result in adverse outcomes.<sup>10</sup> The use of the same performance data by specialists will provide early warning of any deterioration in performance and allow remedial action to be taken by the specialist.<sup>11</sup>

### "Near miss" incident reporting

The ability of trainees and specialists to report "near miss" incidents and actual adverse events which can be examined by the local department morbidity and mortality structure increases the likelihood of improved patient safety. This is because the systemic causes of the incidents can be identified and eliminated by analysis of the reports before actual patient harm occurs in the case of "near miss" incidents. The published reporting of 2.5% actual and "near miss" incidents by anaesthetic registrars provides an illustration of the ease of use of the programme and the relative frequency of incidents occurring in the anaesthetic practice of Australian trainees. The value to indemnity organisations or reinsurers of medical risk is the likely reduction in adverse events and adverse patient outcomes that widespread adoption would achieve. Use of reliable favourable performance data to justify trainee and specialist activity would also be attractive to indemnity organisations. Demonstration of competence at practical procedures would help legal challenges to both trainees' and specialists' practice in these areas.

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Conflict of interest: Associate Professor S Bolsin and Dr A Patrick are directors of Personal Professional Monitoring Pty Ltd, a 'not for profit' company set up to promote effective performance monitoring of anaesthetic trainees in Australia.

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