

A tragic death: a time to blame or a time to learn?

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A “just culture” is needed if patient safety is to be advanced.

A teenage girl died earlier this year at Duke University Medical Center after a heart-lung transplant when the donor turned out to be ABO incompatible.¹ The circumstances were particularly tragic and poignant; the funds for her procedure had been raised by concerned citizens in support of her desperate parents who had taken quite extraordinary steps to save the life of their daughter. The surgeon who requested and accepted the organs assumed that ABO compatibility had been established. The error was detected only after the procedure had been completed. In spite of every effort, life support had to be withdrawn some 2 weeks later when brain death became evident after a second transplant. The response of the hospital and its staff appears to have been exemplary. Responsibility for the disaster was accepted, everyone was kept fully informed, an urgent investigation was undertaken, and measures to prevent a recurrence immediately instituted.¹ However, matters were made extraordinarily difficult for all involved, including her family, by an incendiary media frenzy.

In the short time since her tragic death there has been much comment on the events leading to it and on what is needed to prevent this happening again.¹⁻³ But there are also crucial lessons to be learned from the way in which it has been reported and written about. These have wide implications. It would compound the tragedy if the “legacy” of this so public and so unnecessary death resulted in improvements in ensuring organ compatibility but also perpetuated attitudes that hinder significant advances in making health care safer. Five statements that appeared in just one paper illustrate how far we have to go to advance the understanding of safety within health care.

(1) *“In the aftermath of such a disaster there must be an assignment of blame”*. Errors, by definition, are unintentional and are rarely truly blameworthy.⁴ Unfortunately, the tort system requires fault to be found and blame to be apportioned for compensation to be awarded, reinforcing the powerful human tendency to apportion blame on the basis of outcome rather than culpability.^{5,6} The assumption by the surgeon that incompatible organs would not have been

offered was, in our view, reasonable, albeit disastrous in hindsight. Blaming—and thereby effectively punishing—well intentioned individuals, whether team leaders or team members, when things go wrong as a result of genuine errors achieves nothing (as acknowledged by *Campion*²), is unjust, and is usually counterproductive.⁷ Blaming and punishing is both reasonable and appropriate when a patient is harmed as a result of a violation or deliberately unsafe act, but this does not appear to have been the case here.

(2) *“... last month the country heard that things at Duke had gone terribly wrong for no good reason”*. There are, in fact, excellent reasons why things go wrong with the present approach to trying to ensure ABO compatibility, whether for blood or for donor organs.^{8,9} It is currently inevitable that hundreds of ABO incompatibilities slip through the net every year, a substantial number of which result in death. Common errors such as misidentification and mislabelling at ward level, both at the time of taking blood samples and of giving blood (or tissue) can only be truly minimised by the establishment of a completely separate duplicate process, rather than trying to strengthen intrinsically vulnerable links in a single linear chain.

(3) *“I am ultimately responsible for the team and for this error”*. We suggest that this traditional notion is anachronistic and illogical. While someone must be ultimately responsible for the overall structure and function of any team, this person cannot in reason or justice be responsible for every error made by any member of the team. Transplant surgeons have numerous important tasks to undertake under severe time constraints and it is inappropriate for them to have to divert their finite cognitive resource to ensuring that they personally check every aspect of every process. They should be entitled to rely on other trained professionals to do their jobs properly. Is it reasonable to hold the surgeon responsible if faulty filters or membranes were used in the cardiopulmonary bypass machine, or if a wrong drug was inadvertently used by the anesthesiologist? The problem in this case appears to have been a system failure and it is far

from clear that any individual on the transplant team was “to blame”.^{4,7} The processes used were simply inadequate and, unfortunately, this only became apparent by way of a disaster.

(4) *“Her story does not support the cause of strict limits on the damages a jury can award”*. Whilst fully acknowledging the exceptional circumstances of this case and the inability of anyone bar her parents to fully appreciate the depth of the resulting grief and devastation, the general thrust of an argument to cap punitive damages should not logically be constrained by the story surrounding her death, however tragic and poignant. If anything, cases such as these provide a strong argument for capping punitive damages—which should only be awarded where genuinely culpable behaviour has occurred. Compensation for loss of earnings is a quite different matter, but probably does not apply to any significant extent in this case.

(5) *“Nationally, this tragedy has already weakened the prospects in Congress for malpractice-liability reform”*. While this may be the case, it is at least partially because sensationalist media reports promote the unfettered advancement of popular misconceptions about the relationship between error and blame, especially when things that go wrong result in unexpected catastrophic outcomes. Accepting these misconceptions as the basis for what should ensue in the aftermath of a disaster such as this will simply result in “more of the same”. While some may consider that editors in the populist press have a duty to reinforce the prejudices of their readers, we would argue that the opposite should pertain with respect to the mainstream medical press, which should promote a proper understanding of the complex relationships between error, blame, and violations when complex systems fail.

Major initiatives are underway to address the root causes of iatrogenic harm. One important aim is to replace the pervasive “blame culture” in health care with a “just culture”.⁷ It behoves a journal with a richly deserved reputation for being at the forefront of disseminating research to act as a platform for advancing the complex arguments that must underpin initiatives in the area of patient safety. The statements we have commented upon reflect widely held sentiments. However, we believe that they are not in accordance with current thinking about organisational failure.^{4,6,7} Unchallenged, when presented in a leading medical journal, they will perpetuate one of the root causes of iatrogenic harm—the blaming of individuals for the tragic consequences of system failures.

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Research knowledge

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Using research knowledge to improve health care

H Buchan

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Better connections are needed between the generation and implementation of knowledge.

In 1810 a British merchant who supplied food to the Royal Navy discovered how to preserve food safely in tin cans. The military advantages of a portable long lasting food source packaged in containers that do not break were obvious and the popularity of canned foods dramatically increased during the American Civil War. The benefits for the general population were also readily apparent and this led to further growth in the canned food industry. Yet the drive to produce and package canned food safely was not matched by an equivalent focus on safe extraction of the contents of the can. Soldiers used pocket knives, bayonets, or even rifle fire to break into cans. A can of veal taken on an Arctic expedition by the British explorer Sir William Parry carried the instruction "Cut round on the top with a chisel and hammer". It wasn't until nearly 50 years after the invention of tin canisters that the first patent for a can opener was issued.¹

This technology lag has some remarkable similarities to the current situation with research transfer and uptake in health care. We are able to produce research—reams and reams of it. The average practising clinician is flooded with information; in 1992 it was estimated that to keep up to date the dedicated general physician would need to read about 17 articles a day, every day of the year.² In response to this information overload we have become more adept at reporting and packaging research. There is now a significant industry devoted to improving the production of evidence based guidance and delivering this information in ways that are

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- focus on action;
- be prepared to learn from mistakes rather than punish them;
- work cooperatively; and
- measure what matters.

A core theme that underpins all these messages is the importance of a culture that is committed to improving performance and that values action as well as understanding. Health care has a mixed record in this respect. It is not short on knowledge and it is not lacking in action; the challenge for those trying to improve performance is to increase the linkages between the two.

There are some astonishing examples of slowness to implement knowledge even when the benefits for patients and the healthcare system are clear. Handwashing is a simple, virtually risk free action that helps prevent hospital acquired infection—a condition that carries substantial mortality, morbidity and cost.⁸ The benefits of handwashing have been repeatedly demonstrated over the past 150 years.⁹ Yet healthcare workers in general do not wash their hands; a review of 11 studies published in 2000 noted that the level of compliance with basic handwashing ranged from 16% to 81%.¹⁰ The barriers to uptake have been clearly described¹¹ but, in most cases, the system appears paralysed in terms of its ability to take effective action. A compelling external threat can bring sudden change; it took little more than 2 weeks after the first patient with a case of severe acute respiratory syndrome (SARS) was admitted to Mount Sinai Hospital in Toronto for frequent handwashing to become an institutional requirement,¹² but it is unlikely that these measures will spread to areas where SARS is unknown.

In contrast, there are several other areas in health care that have been characterised by rapid diffusion of innovation; countless new technologies have been embraced with a passionate zeal resulting in widespread uptake. The problem is that rapid uptake is not necessarily linked to good evidence. There are many instances where unwarranted enthusiastic adoption of unproven

more readily accessible to clinicians. Examples are the evolution of the Cochrane Library,³ the development of abstracting journals such as *Evidence Based Medicine*,⁴ and the production of concise sources of reliable information like *Clinical Evidence*,⁵ a publication that aims to find, critically appraise, and summarise evidence about common or important clinical conditions seen in primary and hospital care. Information technology and knowledge management systems are being used to improve timely access to the best available knowledge.⁶ But efficient knowledge packaging and delivery systems, although a critical component of the path to knowledge uptake, are not enough. We still lack the can openers that will help us easily and quickly to get research findings used to benefit patients.

We are not the only industry where this is an issue. The "knowing-doing gap" has been identified as a core problem for many companies from a number of industries.⁷ So why does it happen and what can we do about it? As with all complex issues there are no easy answers; knowledge remains unused in practice for a whole host of reasons but there are some recurrent themes that emerge from all that has been written on this topic. The messages from other industries that seek to apply knowledge in practice include:

- involve the end user from the start of the research process;
- diagnose the reasons for failure to adopt best practice;
- match interventions to barriers;

technology—"fashions" in operations and drug use—or behaviours such as bottle feeding instead of breast feeding has led to harm.¹³ Twenty years ago McKinley mapped the career of a medical innovation¹⁴ and advocated for policy makers to use evidence of effectiveness in decisions about allocation of healthcare resources. We still have a lot to learn about how to harness individual and organisational enthusiasm for adopting innovation and to direct this energy into areas where there is sound evidence of value to be gained from increased uptake.

Making better connections between knowledge generation, knowledge delivery, and practical action is the challenge that now faces the healthcare industry if it wants to improve performance and deliver better care. Our efforts this century should focus on designing the can and the can opener in parallel.

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