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A pathway to clinician-led culture change in the operating theatre

by J Gibbs and P Smith

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Noise in the operating theatre environment has remained a persistent and unresolved problem (Szalma & Hancock 2011). The problem currently lacks an effective solution (Schafer et al 2012). In order to partially resolve this issue, the authors created a behavioural noise reduction tool called 'Below Ten Thousand'. This study identifies a potential solution to the problem of behavioural noise in the operating theatre, and indicates further research must be undertaken to identify the full scale of benefits this technique can deliver to the team environment in the operating theatre.

Introduction

'Below Ten Thousand' began as an opportunistic conversation in the recovery room.

Two clinical nurse specialists with very different problem solving styles started a discussion about a problem they had both relentlessly experienced. The problem was one of ambient noise in the operating theatre whilst inducing anaesthesia and also whilst extubating patients. Noise was a persistent and pervasive problem, and had been so for some time (Schafer et al 2012).

Mind-mapping an approach

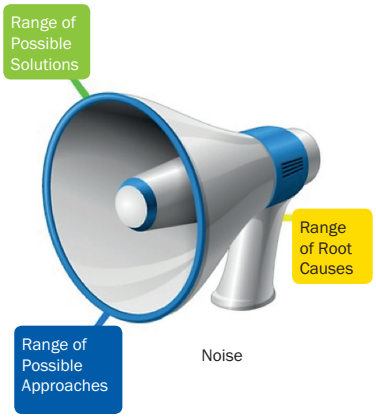
The nature of conversation turned from one of general complaint to one of solution-finding with the posing of a single magic question: "....So, what would such an answer LOOK like?"

This question allowed us to consider the problem from three distinct directions:

1. The range of root causes;

2. The range of possible solutions;

3. And the range of possible approaches.



The search for answers

The newly reframed solution framework allowed John to search for possible pre-engineered solutions that were already in existence. He found that there were none forthcoming from any healthcare-related sources such as professional journals, operating theatre standards or internet searches. He, however, perceived the possibility for a solution from within the aeronautical industry whilst exploring the aviation-specific 'Sterile Cockpit' policy.

Box 1: Sterile Cockpit Rules

The rules governing the 'Sterile Cockpit Environment' have been clearly defined within the Code of Federal Regulations FAA (Federal Aviation Administration) FAR 121.542/135.100, "Flight Crewmember Duties"

In part this ruling reads:

'...nor may any flight crewmember perform, any duties during a critical phase of flight except those duties required for the safe operation of the aircraft.'

'No flight crewmember may engage in, nor may any pilot in command permit, any activity during a critical phase of flight which could distract any flight crewmember from the performance of his or her duties or which could interfere in any way with the proper conduct of those duties.'

'For the purposes of this section, critical phases of flight includes all ground operations involving taxi, take-off and landing, and all other flight operations conducted below 10,000 feet, except cruise flight.'

Amdt. 121-369, Eff. 4/14/2014

Therefore the range of possible approaches for us became either 'official and mandatory' (preferred) or 'cultural and voluntary' (deferred)

In particular, he saw potential in the Below Ten Thousand concept which described the minimising of distractions at sentinel times to enhance focus on the task at hand whilst the plane was between the ground and 10,000 feet. This range of altitudes signified the period of highest cognitive load for pilots, and was therefore where the greatest risk existed for potential error-making due to noise and distractions inclusive of non-task related conversations (Sumwait 1993).

Having found a possible solution, we next had to examine the range of probable root causes in order to determine if the possible solution was a sufficiently good fit for our particular context.

Systems and context

We examined whether the problem had systemic causes, or whether it was merely social-behavioural in nature.

In considering this prospect, we had to rely on our knowledge of systems architecture as well as our knowledge of human behaviour within social and team constructs. What we found were multiple factors relating to both.

There were no systemic solutions currently in place, and anthropologic data suggested that people, when collected into groups, tended to converse as a purely social function (Douglas 1970).

We also found that the operating theatre team was, in fact, a collection of teams within teams, all competing for auditory bandwidth and often spatial real estate whilst working in parallel to achieve a collective but singular outcome.

We also found that professionals routinely observing sentinel task-sets tended to 'normalise' their perspective on such events, and so, what would seem a dangerous time in the eyes of a novice, for example the process of intubation, was just another routine task sequence in the eyes of experienced operating theatre personnel (Wheelock et al 2015).

Box 2: The Sterile Cockpit Rules as they apply in the operating room

- No non-task related noise and distraction during critical phases of an operation
- Maintain situational awareness and focus on the task at hand
- Use effective and secure leadership strategies which minimise tension and conflict and maximise collaboration and cooperation
- Provide a safe communication and focus environment
- Perform as a safe, high reliability, high performance team

Defining alternate pathways

Returning to our 'range of possible solutions', we were able to input the root cause analyses and found that a range of possible strategic paths were available for the introduction of such a solution into the clinical realm.

The first and most effective pathway was to make the Below Ten Thousand moment, as we saw it, a statutory behaviour reinforced/enforced by organisational policy.

This would make the solution to what we now saw as a safety problem immediately implementable. We could easily navigate the accepted change processes of policy development, education and implementation to achieve an outcome that was definitive and enforceable by performance management measures.

That is, anyone NOT complying with the reasonable request for the creation of a safe working environment free from noise and distractions could be held accountable for their actions.

The second and presumed less effective pathway was to seek compliance through voluntary changes in behaviour. The initiative would evolve in effectiveness over time through incremental uptake and progressive reinforcement. However, uptake would be strongly dependent upon the willingness of the clinical community to engage proactively in a voluntary behavioural code.

That is, making an appeal to the intelligence and goodwill of the operating theatre population in order to achieve the desired outcome of noise and distraction abatement, triggering situational awareness and high performance team behaviours during times of induction and extubation of the patient (Stevenson et al 2013).

Therefore the range of possible approaches for us became either 'official and mandatory' (preferred) or 'cultural and voluntary' (deferred).

Diverse collaboration

Having mapped our solution and our implementation strategies, it was important for us to open the idea to critical feedback.

Since the Below Ten Thousand idea was a radical new clinical innovation, we felt it necessary to engage in 'market research' methodologies to assess the 'user interface'.

We printed a presentation booklet which sketched the idea and proffered a prototype policy, and approached a wide diverse range of clinicians across multiple disciplines.

The feedback we received from nurses, anaesthetic and surgical consultants, registrars and theatre technicians was assessed and collaboratively embedded into the original concept to make it more powerful and global in its reach and application.

Irena, an anaesthetic registrar, clarified and extended our concept by saying: "It's not always 'quiet' we are after. It is also the opportunity for communication and collaboration."

She went on to explain her own personal anecdote where the surgeon, at the end of the case, said to her: "Well, THAT was difficult!"

"How so?" she asked.

The surgeon outlined a situation of increased complexity due to generalised bleeding.

"...Oh." said Irena. "You should have said something. I could have helped you with that."

Similarly, scrub nurses repeatedly reflected upon times when there was so much background noise in the operating room they could scarcely hear the surgeon's requests.

They also commented on distractions which made it difficult to successfully negotiate the 'Time-Out' (Surgical Safety Checklist) process, which is a mandated safety

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Continued

initiative from the World Health Organisation aimed at minimising preventable surgery-related process errors.

Soon the Below Ten Thousand concept had expanded to include the periods:

- Surgical Count
- Induction of anaesthesia
- Time-out
- Extubation

And at any other time in between as required.

Obstacles to early adoption are inevitable

It all sounds so simple and obvious... doesn't it?

However, despite our innovating and advocating and collaborating and educating, the proposal sat on desks for six months with no executive interest.

Finally, an attempt by our educator was made to secure a half hour presentation time-slot at an in-service education session. This opportunity was blockaded and it was then that we realised the 'official and mandatory' pathway was becoming more unlikely to proceed.

What worried us was that safety continued to be undermined, and anaesthetists were still struggling to deal with noise in the operating theatre at key sentinel times (Feil 2014).

Worse, anaesthetists, nurses and technicians were being exposed to counterproductive behaviours whilst systemic and social-behavioural interplays remained unresolved.

We felt bad: worse, in fact, now that we had a solution in our hands.

In a strategy meeting, John and I decided that we would have to progress Below Ten Thousand down the 'clinician-led culture change' pathway.

We reasoned that since no change in actual clinical practice would be occurring, no-one could reasonably insist that we desist, since we were merely replacing one trigger phrase, specifically and personally targeted in the form of "Shut up!!!!"; with another trigger phrase, non-emotive and non-specifically targeted to the room in general: "Below Ten thousand".

Opportunities inherent in non-typical clinical education

Since our approach was going to be 'ground-up' rather than 'top down', we figured we had to appeal to our target audience in non-traditional ways.

We adopted a guerrilla marketing approach, and in the initial phase, we bill-posted the entire suite with a picture of a stress-ball plane with the words 'Below 10,000' on it.

Curious people came to us of their own volition.

"We see these pictures everywhere, and somehow we reckon you two are responsible. What's it all about?"

Despite the fact that this was in the middle of a hospital accreditation process and staff were overwhelmed with accreditation-related information, we had been given an invitation to talk. Better, we knew that network theory would assist in spreading the word for us.

We then engaged, through informal and semi-formal in-service education, with all and sundry, producing T-shirts, posters, tri-fold pamphlets, home-made chatterboxes and the real thing: 100 stress-ball planes with 'Below 10,000' written on them.

To create more interest, we submitted an abstract to the Australian College of Operating Room Nurses (ACORN) 2014 National Conference, which was duly accepted.

Since we would be presenting to a national audience, we created a website, www.belowtenthousand.com that would allow clinicians from around the country to download and use our readymade resources for free.

John created a Facebook page to keep our own work colleagues abreast of events and to grow and support a community of like-minded clinicians.

Following our success at ACORN, we have presented at several other national conferences and also used other projects such as our 'Recovery Education' resource and our work on 'fatigue in the operating suite' to cross-promote Below Ten Thousand as a non-technical Model of Care.

The Below Ten Thousand methodology has been adopted at several other major hospitals, and our reach now extends from some of the largest units in Australia (for example, Liverpool Hospital in Sydney, New South Wales) to some of the smallest in the land (Kangaroo Island, South Australia).

Social media has played an essential role in promoting our safety concept, not just within our own country, but around the world. We have made many new friendships whilst on this journey.

Box 3: Use 'Below Ten Thousand' at

S	Surgical Count
I	Induction
T	Time-Out
E	Extubation

And at any other time as required

Launching a proposed safety initiative: our conclusion

In short, we had to sell the concept to the world in order to sell it to our own organisation.

We finally have a written policy adopted as an 'Agreed Behaviour' within our operating suite.

Our most significant 'win' was proving that clinician-led culture change can succeed.

Below Ten Thousand celebrates new vision, vigor and the commitment of 'Two Victorian Country Nurses' to challenge current thinking and improve safety.

Below Ten Thousand clearly demonstrates how clinical coal face nurses can affect meaningful and significant 'ground up culture change' in the current health care setting, and though the concept is ridiculously simple, the journey towards implementation has been a long, complex and challenging process.

We have proved to ourselves and our colleagues that clinician-led change is not only possible, but it is a responsibility we each have to accept if we are to engineer within our own clinical environment pathways to meaningful safety and quality change.

It took a lot of work, collaboration and persistence in the face of unanticipated challenge. It took an unerring focus on integration and transparency of process. And it took a lot of belief in the value and ethics of the outcome we were pursuing

In our continued research, we have discovered that Below Ten Thousand is our 'toe in the water' on the journey toward introducing high performance teams' methodologies to the operating theatres.

In the end, we came up with a slogan: "Below Ten Thousand: Smarter; Better; Safer".

On Tuesday 1st September 2015, Below Ten Thousand was again successfully used in a theatre by Britt and Judy, an anaesthetist and anaesthetic nurse, whilst attending to an infant; power to them for using it.

And power to the team that responded so professionally and affirmatively, affording two incredible everyday clinicians the optimal environment within which to practice their vital art.

We celebrate our small successes.

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