Filling the gap between theory and practice

Damian Castanelli
20/9/2014
We teach often, but how cognizant are we of educational ‘best practice’?

Do our teaching methods take note of relevant
• theory
• research
• & evidence
in medical education?
There is a gap.

It can be filled.

How will we fill it?
What do I mean?

In a typical day at work we might...

• Use opioids with volatiles

• Give anti-emetic prophylaxis

• Send a patient for a preoperative stress echocardiogram
What do I mean?

We utilise theory and evidence to guide our practice to...

• Utilise synergy between opioids and volatiles

• Give medications based on guidelines. E.g. anti-emetics

• Send preoperative patients for diagnostic tests
What do I mean about a gap?

We utilise theory and evidence to guide our practice to...

Combine opioids and volatiles synergistically
Reduction of Isoflurane Minimal Alveolar Concentration by Remifentanil

Figure 1. The reduction in isoflurane concentration to prevent movement at skin incision in 50% of patients by increasing measured remifentanil whole blood concentrations. F represents a patient who moved and S a patient who did not move. The solid line is the logistic regression solution for a patient aged 40 yr. The three patients not receiving any isoflurane are illustrated in the figure but are not used in determining the logistic regression line.
What do I mean?

We utilise theory and evidence to guide this practice to... Give medications based on guidelines. E.g. anti-emetics,
Consensus Guidelines for the Management of Postoperative Nausea and Vomiting

Tong J. Gan, MD, MHS, FRCA,* Pierre Diemunsch, MD, PhD,† Ashraf S. Habib, MB, FRCA,* Anthony Kovac, MD,‡ Peter Kranke, MD, PhD, MBA,§ Tricia A. Meyer, PharmD, MS, FASHP,¶ Mehemoor Watcha, MD,¶¶ Frances Chung, MBBS,# Shane Angus, AA-C, MS,** Christian C. Apfel, MD, PhD, †† Sergio D. Bergese, MD,††† Keith A. Candiotti, MD,§§ Matthew TV Chan, MB, BS, FANZCA,|| || Peter J. Davis, MD,¶¶¶ Vallire D. Hooper, PhD, RN, CPAN, FAAN,## Sandhya Lagoo-Deenadayalan, MD, PhD,*** Paul Myles, MD,††† Greg Nezat, CRNA, CDR, USN, PhD, §§§ Beverly K. Philip, MD,|| || and Martin R. Tramèr, MD, DPhil¶¶¶

The present guidelines are the most recent data on postoperative nausea and vomiting (PONV) and an update on the 2 previous sets of guidelines published in 2003 and 2007. These guidelines were compiled by a multidisciplinary international panel of individuals with interest and expertise in PONV under the auspices of the Society for Ambulatory Anesthesia. The panel members critically and systematically evaluated the current medical literature on PONV to provide an evidence-based reference tool for the management of adults and children who are undergoing surgery and are at increased risk for PONV. These guidelines identify patients at risk for PONV in adults and children; recommend approaches for reducing baseline risks for PONV; identify the most effective antiemetic single therapy and combination therapy regimens for PONV prophylaxis, including nonpharmacologic approaches; recommend strategies for treatment of PONV when it occurs; provide an algorithm for the management of individuals at increased risk for PONV as well as steps to ensure PONV prevention and treatment are implemented in the clinical setting. (Anesth Analg 2014;118:85–113)
What do I mean?

We utilise theory and evidence to guide our practice to...

Send preoperative patients for diagnostic tests
Fleisher LA, et al.
2014 ACC/AHA Perioperative Guideline

2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines

Developed in Collaboration With the American College of Surgeons, American Society of Anesthesiologists, American Society of Echocardiography, American Society of Nuclear Cardiology, Society for Cardiovascular Angiography and Interventions, and Society of Cardiovascular Anesthesiologists,

Endorsed by the Society of Hospital Medicine

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What about our teaching practice?

In a typical day at work we might…

Supervise/ feedback to the PFY on management of a complex airway at the start of the day

PM list: teach the new SRMO spinals

Take a registrar tutorial for exam preparation
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Do We?
What did you say?

Survey of the use of medical education theory and evidence by anaesthetists in Australia and New Zealand 2013

364 responses from random sample and Med Ed SIG

Response rate 19%
Teaching performance compared to clinical performance

- Much lower: 9%
- Lower: 37%
- Same: 47%
- Higher: 7%
- Much higher: 0.3%
Consciously used theory or evidence in teaching

Never
Once or twice
Sometimes
Often
Regularly
Activities undertaken to help in role as clinical teacher

- Asked advice from a better qualified colleague (92%)
- Attended medical education sessions at ANZCA ASM, ASA NSM, MedEd SIG Meeting (77%)
- Attended a workshop or short course on teaching, e.g. Teaching on the Run (47%)
- Attended an instructor course, e.g. EMAC, EMST, ALS (41%)
- Attended an ANZCA Clinical Teachers Course (24%)
- Completed a university medical education course (10%)
Accessing the knowledge base

- 52% report having never accessed any medical education article
- 27% have read education articles in anaesthetic/medical journals
- Only 21% have read an article from a medical education journal
Best Practice in education?

As a group we rate our teaching performance lower than our clinical performance

We do consult our colleagues for advice on teaching, and we like to attend conference sessions, workshops and short courses

Most of us do not actively consider the evidence or theory that might support how we teach

We generally don’t access medical education literature
Best Practice in anaesthesia?

As a group we rate our clinical performance higher than our teaching performance.

We do consult our colleagues for advice on providing anaesthesia, and we like to attend conference sessions, workshops and short courses.

Most of us do not actively consider the evidence or theory that might support how we practice anaesthesia.

We generally don’t access the anaesthetic literature.
There is a gap....does this matter?
How do we know if we don’t look?
Our aim as teachers is...
Excellence
“FANZCAs engage in a lifelong pursuit of excellence in anaesthesia, continually learning and modelling this for others...they facilitate the learning of patients, families, students, trainees...”

ANZCA Curriculum Framework 2010
Best Practice in education?

We do consult our colleagues for advice on teaching.

We do attend conference sessions, workshops and short courses.

Some of us actively consider the evidence or theory that might support how we teach.

Nearly half of us have accessed medical education articles.
Interested in improving...
What about our teaching practice?

We utilise theory and evidence to guide our practice to...

Supervise/ feedback to the PFY on management of a complex airway at the start of the day

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Feedback to the PFY on her management of a complex airway at the start of the day
Feedback- historically

‘Mealy-mouthed’
-unwilling to state facts or opinions simply and directly.
Aims to protect fragile learners
Results in the ‘shit sandwich’

Ritualised, didactic, supervisor-focused
Trainee is in error, needs to be taught
Avoids critical areas and limits learning
Feedback - historically

‘guess what I am thinking’

Aim to appear non-judgemental
Socratic questioning
‘Ease in’ or guide the learner to the answer

Frustrating for the learner, supervisor focused
Trainee is in error, needs to be taught
Difficult errors not discussed - wrong message
Feedback- Advocacy Inquiry

Clear signal about the supervisor’s point of view while reducing the potential noise

Respects trainee as a fellow practitioner, no assumption of defect in trainee

Meanings and assumptions of both parties are open for exploration

Supervisor isn’t only source of truth
“I have a take on what happened; that does lead me to think there were some problems but…”

“you are also a smart, well-trained practitioner, trying to do the right thing, who has your own view on what happened…”

“I am going to approach this as a genuine puzzle; not paralysis or indecision, but holding my own view tentatively. I seek clarity by honest inquiry (we both may learn something or change our minds)”
Advocacy Inquiry

“Help me understand why you…?”

“I noticed X. I was concerned about that because Y. I wonder how you saw it?”

“Help me understand why you chose an inhalational induction instead of an awake technique?”

“I noticed that when the patient desaturated you immediately stopped your attempts at intubation and signalled for the surgeon to start performing a tracheostomy. I was concerned that you had other alternative means of securing the airway still available that you had not yet tried. I wonder how you saw it?”
What about our teaching practice?

We **CAN** utilise theory and evidence to guide our practice to...

PM list: teach the new SRMO spinals
Teaching a spinal

“See one, do one, teach one”

Workplace-based learning historically made up the majority of learning, not classes

Observation, Practice, Teaching

We have much more detail to flesh this out now…

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• Part / Whole task attempt  
• Shared / Total Responsibility  
• Concurrent / Summary FB  
**Limits**  
• Under what conditions will you take over?  
  • Time?  
  • No of attempts  
**Responsibilities**  
• Who will be  
  • Monitoring patient  
  • Providing sedation  
  • Communicating with the patient  
|                                                                 | • “You’ve watched one before, how do you feel about doing this one together? I’ll look after the patient so you can concentrate on what you are doing. We have time today but if you’re doing something that puts the patient at risk I’ll jump in and help.”  
|                                                                 | • “Ah, given you haven’t done this block before, how about I prepare the equipment, you concentrate on positioning, choosing the insertion site and I’ll talk you through the rest of the block?”  
| Skill Performance | • Provide concurrent feedback if appropriate  
• Provide appropriate level of scaffolding  
• Provide safe non-threatening learning environment  
|                                                                 | • “As we discussed today I’m going to talk you through the block.”  
|                                                                 | “ that’s a good place to put the needle, but I would angle it a bit less steeply”  
| De-briefing  | **Ask Questions**  
• What were you happy with?  
• What could you have done better?  
• What will you do differently next time?  
**Feedback**  
• Reinforce positives  
• Provide strategies to overcome deficits  
• Assess the value of the learning interaction  
|                                                                 | • “If you hit bone you need to decide if you are at the lamina or have gone too far- you won’t do that when you have done more, but sometimes as a learner you can come back with the stylet out and get CSF”  
|                                                                 | “You gripped the needle with your hand braced on the back when you injected- it’s important to always do that in case the patient moves”  
|                                                                 | “How do you think the session went today, does this kind of teaching work well for you?”  
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We **CAN** utilise theory and evidence to guide our practice to…

Take a registrar tutorial for exam preparation
Small Group Learning

Not a Mini-Lecture or a Powerpoint presentation

Many options for this, PBL, Case-Based, so long as it is...

Interactive & discussion-based

‘Flipped classroom’

- Figure out which topics you want to flip
- Locate content-based resources to make available to students outside of class
- Include an incentive for students to complete the work such as a quiz or writing assignment
- Provide in-class activities for students to apply the content they learned outside of class
Flipped classroom

Pre-tutorial activities cover Bloom’s lower level objectives- e.g. knowledge recall

Need to prioritise, engage and motivate, not ‘dump’ all content

Class-time freed up from knowledge transfer to interactive activities

Multiple ways to present information e.g. vimeo with audio and slides
Flipped classroom

What was the most difficult part to understand?

Can get learners to explain to each other.

Can incorporate quizzes and exam practice

Moffett J. Twelve tips for "flipping" the classroom. Med Teach. 2014 Aug 26:1-6
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Supervise/ feedback to the PFY on management of a complex airway at the start of the day

PM list: teach the new SRMO spinals

Take a registrar tutorial for exam preparation
There is a gap... but it can be bridged
Many Hands Make Light Work
How can we do this together?

Department Level?

ANZCA Level?
How can we do this together?

If we are ‘phoning a friend’ how do we make sure they know more than us?

-> Develop a recognised ‘Clinician Educator’ role

-> Designated educationally qualified support person for clinical teachers within departments
“FANZCAs engage in a lifelong pursuit of excellence in anaesthesia, continually learning and modelling this for others...they facilitate the learning of patients, families, students, trainees...”

ANZCA Curriculum Framework 2010
What other ideas do you have?

Email me if you have ideas or want more information about anything:

drcastanelli@gmail.com
Medical Education journals available on ANZCA library

- Academic Medicine
- **Clinical Teacher** - *good place to start*
- Journal of Continuing Education in Health Professions
- Medical Education
- Medical Education Online
- **Medical Teacher** - *bridges the gap between researcher and practice*