360° assessment of surgical trainees: Is it a hopeless chimera?

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360° assessment – Multisource feedback (MSF)

Meant to assess several constructs:

- Clinical competence: Knowledge and skills
- Professionalism
- Interpersonal relationships
- Managerial competence
The assessment pathway is cyclical
Components of surgical training:

- **Knowledge**: Assessed to high degree
- **Skills**: Assessed to a low degree
- **Professionalism (Attitudes)**: Hardly assessed at all
Facing problems on all these issues

- Knowledge – Information overload
- Skills – WTD; Technological development; Undefined metrics
- Attitudes – Tangible regress
Knowledge: Medline (PubMed) Statistics
This information overload means:

- 1,114,000 medical scientific papers in 2013 in Medline
- >16,000 RCT’s in 2013
- 309 RCT’s / week
- 44 RCT’s / day
- Growing by 7% / year
- Doubling every 10 years
Skills: Parallels with aircraft pilots in simulation and assessments:

- “Pilot handling flying skills have become eroded since........fully automated, systems-designed aircraft”

- “Most accidents occur in phases which involve pilot skills”
Remedial measures regarding aircraft pilots:

- Monitor skill levels during real-life pilot handling
- Monitor line flying observations
- Simulation observations
- Feedback from above indicators to adjust training skills
Assessing surgical technical skills

- Need for a taxonomy of metrics
What is a ‘metric’?

- Measurement of what is valued in human performance
- Each aspect of performance constitutes a metric
What skills are we assessing?

- Bedside tasks
- Surgical procedures
- Outcomes
Need to assess technical skills

- Patient safety
- New technologies
- Advent of simulation-based training
- Public and media scrutiny
- Accountability
Value of clinical skills centres

- Independent of ‘real patients’
- Allows structured training
- Immediate feedback
- Repeated practice
- Objective as well as subjective metrics of performance
- Risk-free training
Which model?

- Bench model
- Box trainer
- Task trainer (e.g. Central line insertion, colonoscopy, AAA simulators)
- Hybrid simulators (simulate technique and teamwork)
- Full body manikin
- Virtual reality
- Animal cadaver
- Human cadaver
- Live animal
- Live patient
Which instrument?

- Competence based logbooks
- Checklists (task-specific or procedural)
- Simulators and other models
What metrics?

- Objective
- Subjective
Objective metrics

- Psychomotor skills and abilities
- Speed
- Accuracy
- Efficiency (Time/motion studies)
- Manual technique
- Errors
- Task specific or procedural checklists
- Decision making skills
- Outcomes (e.g. Tensile strength of knot; wound closure approximation; patency of anastomotic closure; lesion margin distance; lymph node clearance count; wound infection rate; estimated blood loss; sperm count post vasectomy)
Subjective metrics

- Technical skills rating scales (Process rate scales)

- Assessment of human factors (confidence, stamina, temper, dealing with stress)

- Critical fails
Attitudes

- The situation is not reassuring
“Surgery is a specialty adrift ....... lacks professionalism and leadership”
Status quo:

- Virtue based medicine is under threat
- Ours is a profession grounded in compassion and sympathy for the sick
- There is plenty of science and technology but little caring in medicine
- Medicine is becoming a technical exercise
- Health care has been transformed into a commodity – numbers, output
- Altruism, virtue, solidarity, human dignity and the common good seem to have no place
- Too much influence by the entrepreneur and corporate industry
How is training in professionalism done now?

- There is a “hidden curriculum”

- Osmosis from role models

- This may propagate inappropriate behaviour patterns
How can we influence training in professionalism?

- Foster a harmonious environment that encourages proper thinking and work
- Encourage meaningful debate
- Give recognition for positive outcomes
- Define opportunities that challenge trainees
- Be mindful of organisational vision, mission and values
- Attract and stimulate the best talent
Why is it important? The answer is in the content:

- Respect and compassion towards the sick
- Respect towards colleagues and junior staff
- Abide by the values of honesty, confidentiality and altruism
- Maintain competence throughout our careers
- Improve care by evaluating its processes and outcomes
- Participate in educational programmes
- Provide care irrespective of age, gender, race, disability, religion, social or financial status
- Deliver best quality care in a compassionate and caring way
How do we ensure our trainees (future colleagues) are professional?

- Step 1: Careful selection
- Step 2: Introducing professionalism into curriculum
- Step 3: Teaching and training of professionalism
- Step 4: Assessment of professionalism
Step 1: Careful selection

- Selection criteria vary widely

- Psychological testing to identify self-actualisers, e.g.
  - Acceptance and realism
  - Problem-centering
  - Spontaneity
  - Autonomy
  - Openness to change
Step 2

- Introduce Professionalism into postgraduate surgical curriculum e.g.:
  - American College of Surgeons
  - UK Intercollegiate Surgical Curriculum programme (Module 10)
  - Royal Australasian College of Surgeons
Step 3

- **Teach and train**
  - Videos and film to stimulate discussion
  - Clinical theatre to assess medical behaviour
  - Video based virtual patient case (RCSI)
  - Sharing of anonymous ‘patient stories’
  - BMA – guidance on use of social media

- **However:**
  - Teaching and training of professionalism – still in its infancy
  - Little evidence of how to train and teach professionalism
  - Doubt as to effectiveness of formal teaching on attitudes and behaviour
  - Thus further research in this area is required
Step 4

• Assess
  • If professionalism is not assessed – given low priority by trainees
  • Trainees concentrate only on areas that are formally assessed

• Multisource feedback – 360 degree assessment

• Need for a conscientiousness index – engagement in educational activities, punctuality, submission of data and assignments on time, participation in educational activities;

• Need for a professionalism index – assessment by trainers/tutors (mostly subjective)
What assessment prerequisites are necessary?

- Appropriateness and Relevance
- Standardization:– Contents and execution
- Validity:– Accuracy of tasks with the relevant learning goals
- Reliability
- Objectivity
- Transparency
- Equity
Assessment: Who should be the assessors?

- Self
- Peers
- Co-workers
- Patients
Limitations of 360° assessment

- Technical skills assessment tools are often considered better for formative assessment than for summative assessment.

- Their reliability can be calculated mathematically only to some extent from the various observations (Inter-rater, Test-retest, Internal consistency reliabilities used).

- Multisource feedback (MSF) is probably useful both for formative and summative assessment.
Difficult but necessary

- These are metrics of convenience and are obviously not absolute

- The challenge is in making them practicable
Conclusion

Not everything that counts can be counted, and not everything that can be counted counts.

.....but we need to try to make possible what is necessary.