

# Challenges in teaching TME

## *“The Holy Plane of Rectal Surgery”*

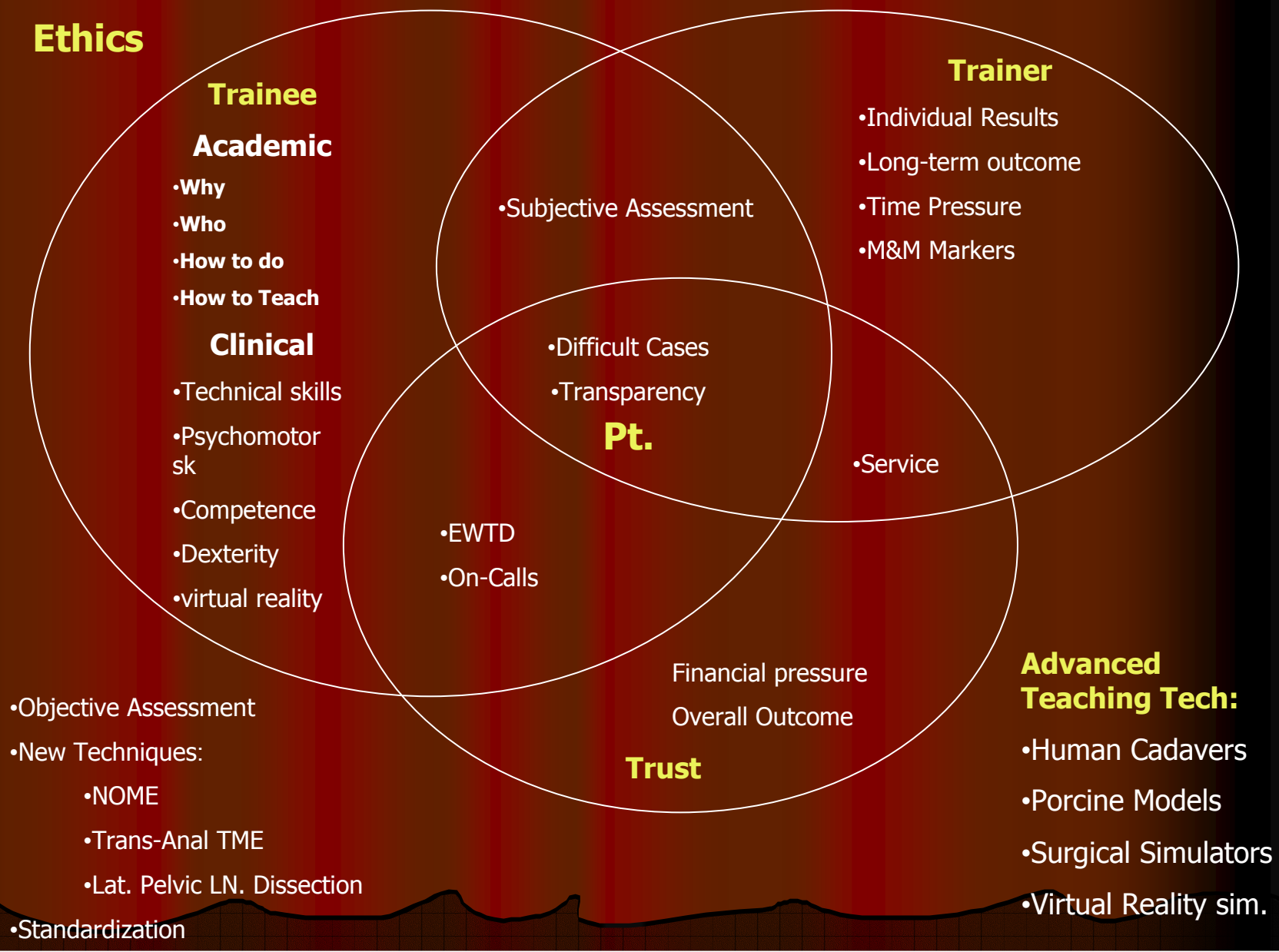
**Amir Morgan**

Consultant Colorectal Surgeon  
East Suffolk & North Essex NHS  
Foundaton trust



# Evidence /

## Ethics



# The Challenges of:

## 1] Finding the Good Teacher : Who should be a Trainer ?

- Typically surgical learning is based on an **apprenticeship** model.
  - Assessment of technical proficiency is the responsibility of the trainers.
  - However, their assessment is largely subjective and unreliable
- All current Colorectal consultants are **surgical trainers**:
  - Trainers themselves have not been subjected to an objective assessment
  - There is no current valid evidence that all consultants can play that role
  - Individual results have recently been published

## 2] Finding Good Schools: Where should Training take place?

- Volume of Work:
  - No current guidance to the minimum volume of work in training Centers
  - Role of Centralization of service for Quality & Teaching & Research purpose
  - Role of Sub specialization
- Extending the National Fellowship Programms:
  - No current sufficient place for all colorectal trainee
- International Overseas Experience and Trainee Exchange Programms

### 3] Developing a Flexible Training that individually suits trainees: Time

- Current Surgical training allows only 3 Years of Specialty Training “Colorectal” - TME
  - Not all trainees require the same time to achieve the same target.
  - No current assessment for General surgery skills before entering the speciality training stage.
  - No current consideration for previous experience or actual technical skills.

### 4] The Need to develop a Valid and Reliable assessment tools: Focused on TME

- Current Evaluation of a Trainee:
  - Logbook
  - Time taken to perform a procedure
  - ARCP, WPA
  - Exam: MRCS, FRCS
  - Individual Reports
- These are indicative merely of procedural performance and **not a reflection of TME operative ability** and therefore lack content validity
- We should move towards
  - Global rating scales, such as OSATS (objective structured assessment of technical skills)
  - Dexterity analysis systems,
  - Virtual reality simulators
  - Analysis of the final product on bench models
  - Error scoring systems
- Continuous Evaluation of outcome: Trainees & Trainers
  - Role of Pathologist in Evaluating the TME Specimen “Standardization of Reporting”
  - Encouraging an external evaluation of quality of TME
  - Role of retraining

### 3] The Need to Develop an organized TME Teaching Module / Curriculum:

- The current TME Teaching during the Specialty Surgical Training:
  - No Mandatory TME Courses
  - Only Final Year Exam studies
  - Left for Trainee
  - No Role for More Advanced Surgical Tools:
    - Dexterity analysis systems
    - Virtual reality simulators
- The Teaching Module should clearly include:
  - Academic Teaching & Testing :
    - Berkeley Moynihan 1908: TME; The monoblock resection of lymphatic field. The applied anatomy of Lymphatic System
    - Swedish / Dutch / MRC (CR07) / Prof. B Heald Series
    - "Quality of TME": Effect of the plane of surgery achieved on local recurrence in patients with operable rectal cancer: a prospective study using data from the MRC CR07 and NCIC-CTG CO16 randomised clinical trial: "Quality of TME":
      - Good TME 52%: LR 4%
      - Intermediate 34%: LR 7%
      - Poor 13%: LR 13%
    - Radiological Modalities: MRI, Endo-anal US
- Laboratory Teaching:
  - Human Cadavers
  - Porcine / Animal Models
  - Surgical Simulators
  - Virtual Reality simulators.
- Supervised TME Practice.
- Advanced Teaching:
  - Nerve oriented TME
  - Transanal TME
  - Robotic / SILS

## **5] Challenges in Teaching Decision making Process:**

- **Who needs TME?**
  - The balance between Functional and oncological Outcome
  - Patients Selection for Sphincter Saving Procedure; Quality of Life
  - Challenge of dealing with Complications; Anterior resection Syndrome
- **What Access should be used ?**
  - CLASSIC ; EnRol, LAFA Trials
  - Adv: More complete TME with intact visceral fascia, Lower anastomosis, less violation of Denonvilliers Fascia
  - Disadvantages: Sexual & Bladder dysfunction, Learning curve, Conversion

## **6] Challenges in Operative theatre:**

- Developing new instruments for lighting (Attached to Retractors)
- Use of High Definition Head Cameras and Monitors
- Laparoscopic Illustrations

## **7] The Challenge of finding sufficient Resources:**

- Service Lists & Training Lists
- Shifting current Recourses towards developing Good Quality Surgeons :
  - Why Prof. B Heald had 4% LR , Less than rates achieved using multimodality treatment ?
- Investing in Simulators and animal labs.
- Virtual reality simulators



### **8] Challenges in involving the patient in the teaching process:**

- Should be a basic part of the consenting process
- What can we provide to encourage patients to participate ?
- Treatment in specialized centres !

### **9] Teaching the fact that “All TME Cases should be recruited in Randomized Trials”:**

- Assessment of functional Outcome is still unclear
- Laparoscopic Role in TME is still being Evaluated
- The Documentations of surgical procedures should be improved
- Should all cases be video taped for retrospective analysis and teaching

### **10]The Challenge of finding sufficient evidence to facilitate Decision Making:**

- Role of TME in Moderate Risk Locally Advanced Rectal Ca
- Patients Reported outcome measures in Colorectal Ca
- Challenging reports addressing value of lateral Pelvic LN dissection
- Nerve-oriented mesorectal excision (NOME)
- Trans-anal TME

## References:

- The 'Holy Plane' of rectal surgery; J R Soc Med. 1988 September; 81(9): 503–508.
- Swedish Rectal Cancer Trial: Long Lasting Benefits From Radiotherapy on Survival and Local Recurrence Rate; doi: **10.1200/JCO.2005.08.144**JCO August 20, 2005 vol. 23no. 24 **5644-5650**
- Preoperative radiotherapy combined with total mesorectal excision for resectable rectal cancer. N Engl J Med. 2001 Aug 30;345(9):638-46.
- Total mesorectal excision results in low local recurrence rates in lymph node-positive rectal cancer. Dis Colon Rectum. 2004 Jul;47(7):1145-9; discussion 1149-50. Epub 2004 Jun 3
- **Effect of the plane of surgery achieved on local recurrence in patients with operable rectal cancer: a prospective study using data from the MRC CR07 and NCIC-CTG CO16 randomised clinical trial: "Quality of TME": Lancet. 2009 Mar 7;373(9666):821-8. doi: **10.1016/S0140-6736(09)60485-2.****
- Runkel N, Reiser H. Nerve-oriented mesorectal excision (NOME): autonomic nerves as landmarks for laparoscopic rectal resection. *Int J Colorectal Dis.* May 11 2013;[Medline].
- ***What do master surgeons think of surgical competence and revalidation?*** Am J Surg 2001; 182: 110–6.
- ***Teaching and testing technical skills.*** Am J Surg 1993; 165:358–61.
- ***An approach to the evaluation of operative skills.*** Surgery 1971; 70: 297–303.
- ***The financial impact of teaching surgical residents in the operating room.*** Am J Surg 1999; 177: 28–32
- ***Assessing operative skill. Needs to become more objective.*** BMJ 1999; 318: 887–8
- ***Surgeon specific mortality in adult cardiac surgery: comparison between crude and risk stratified data.*** BMJ 2003; 327: 13–7
- ***The relationship between motion analysis and surgical technical assessments.*** Am J Surg 2002; 184: 70–3.
- **Objective assessment of technical skills in surgery;** BMJ 2003; 327 doi: <http://dx.doi.org/10.1136/bmj.327.7422.1032> (Published 30 October 2003)**Cite this as:** BMJ 2003;327:1032