Be innovative as an anaesthesiologist

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The task for the Anaesthesiologist

- Like an engineer in a great steamship,… Fundamental knowledge of physiologic phenomena… No routinist, no tyro, no cocksure,…
  - Saxton Pope. The relation of the surgeon to the anesthesiologist. Cal State J Med. 1922; 20: 385

- OR-manager improving overall quality and efficiency of economic resources
  - Gebhard E. OR-manager: surgeon or anesthesiologist? An interdisciplinary study Anaesthesist. 2003; 52:1062

- Managing high-performing and high-reliability teams to achieve high-quality surgical care
 Recognition by the patients: Anesthesiologists often remain in anonymity.

- Wetchler BV. Patients don‘t know who we are. ASA Newsletter 1994; 58:2–4.
- Kindler CH The patients' perception of the anesthetist. Anaesthetist 2002; 51:890

 Recognition by the surgeon: Anesthesiologists are often seen as coffee drinkers, barring surgical work for ‘safety’

- Gfrörer R. Role expectations of various professional groups in the operating theatre. Anaesthesist. 2007; 56:1163.
How improving from safe to ultra safe?

- No limitation in production → Increasing safety margins
- Excessive autonomy of actors → Becoming a team player
- Craftsman’s attitude → Accepting transition to equivalent actors
- Ego-centered safety protections, vertical conflicts → Accepting endorsement of residual risk
- Loss of visibility of risk → Accepting questioning of success and changing strategies

- Fatal iatrogenic adverse events
- Cardiac surgery in patient in ASA 3–5
- Medical risk (total)
- Himalaya mountaineering
- Microlight aircraft or helicopters
- Road safety
- Chemical industry (total)
- Nuclear industry
- Anesthesiology in patient in ASA 1
- Blood transfusion
- Chartered flight
- Commercial large-jet aviation
- Railways

Risk:
- $10^{-2}$ Very unsafe
- $10^{-3}$
- $10^{-4}$
- $10^{-5}$
- $10^{-6}$ Ultrasafe

No system beyond this point.
Anesthesia is now ultra-safe
From Safety to Improving Surgery

- Anaesthesia is close to ultra safe! $10^{-5}$
  - While surgical safety is still $>10$ times less!
  - PONV, post-operative pain, and discomfort are important to the patient but are these recognised by the surgeon?

- Danger of losing scientific activity.

- Solution: search a disease to treat
  - Surgical complications still frequent $10^{-4}$
  - Be involved to improve surgical outcome.
  - We can make the difference
The Evolving Role of the Anaesthesiologist

- Being a team is not enough
  - In a team everyone plays only his role

- Being a transdisciplinary team is the future
  - Improve the surgical work using your skills, knowledge and approach as an anaesthetist.
    - In bariatric surgery anaesthesia reduced post operative bleeding, post operative leaks, ERAS, better workspace

- NMB have been used to improve anaesthesia induction, intubation, and to facilitate ventilation…

- Today, NMB should also be used to improve surgery
  - Better working conditions
  - Potential for faster work/improved efficiency
  - Opportunity to reduce complications/improve outcomes
Be Innovative

- Have a list of 10 clinical (anesthesia and surgery) problems in your practice.
- Be surprised by what happens around you and accept impossibilities.
- Follow other scientist how they use new technology, methods, approaches in solving problems.
- Accept thinking out of the box in finding more than one hypothesis to solve a problem.
- Accept failure and problems that are never solved.
- Remain responsible and ethical correct for your patient.
Inventor of the “transdisciplinarity”
- Ask not only “what the country can do for you” ask also “what you can do for your country.”
- Ask not only “what the surgeon can do for you”, ask also “what you can do for your surgeon”.

Same question to the surgeons
- “Ask not only what the anaesthesiologist can do for you”, ask also “what you can do for your anaesthesiologist”.

J F Kennedy
Use of deep NMB, next to other methods by the anesthesiologist to improve surgical workspace during laparoscopy.

- Use your knowledge of abdominal compliance.
- Use your knowledge of NMB to achieve deep NMB.
- Use your knowledge of reversal to choose the adequate reversal to return to TOF 90%.

This will improve the surgical access and lower surgical complications, like liver trauma, wrong dissection plane, incorrect staple position,...
Danger of (no) Innovation?

- Sustaining innovations by scientist in the field
  - Sustain the current system by being more complex, expensive and inaccessible.

- Disruptive innovations by external persons
  - Disrupt the current system by being simpler, less expensive and accessible to a larger group of customers.
    - By a radical different technology
    - By a solving a totally different consumer model
  - Historical only new companies succeed in being disruptive.

- Triggered if sustaining innovations are insufficient or when existing service is too expensive or inaccessible.
  - The innovators prescription Clayton M Christensen 2009 ISBN 0007 159208 3
Question 1

• Why should we be more innovative?
  1. Obligation to our patients
  2. To improve health care
  3. To have fun and make our work satisfactory
  4. To remain a physician doing science and avoiding to work as a pilot following only fixed rules.
  5. To keep our loan justified.
  6. To keep interest from companies to sustain us
  7. To avoid other disruptive innovations making our job useless.
Question 2

Why are you not innovative as anesthesiologist?

1. I have no lab with sufficient test equipment
2. I am not active anymore as scientist
3. No money to invest
4. Everything is investigated already in anaesthesia as it moved to a mature discipline
5. Not accepted by colleagues or creating envy.
6. This is for the large companies with large research departments
Question 3

• Are you willing to think transdisciplinary?
  1. No I do not see a need for it.
  2. Yes great idea, I will look to move in it.
  3. Yes, I am working already in this way.
Question 4

• What do you miss to be more innovative

1. Money to invest.
2. Time to invest.
3. Support by other scientists like engineers, chemists, data managers, scientific nurses,…
4. Motivated residents in training.
5. Interest from companies to work my inventions further out.
6. Appreciation by colleagues for my research.
7. Colleagues who stop behaving by habits instead of by science