Technology in anesthesia: Crystal balling the future

Amer Majeed
MBBS FGARS FRCA FFICM
Consultant Anesthesiologist
King Faisal Specialist Hospital & Research Centre
Riyadh, Saudi Arabia

Disclosures

No financial disclosures
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Looking into the crystal ball ...

http://www.reddirtreport.com/prairie-opinions/conservative-view-%E2%80%93-who-needs-crystal-ball

Surgical chambers

Moving goal post for innovation

Technological innovations

Changing face of medicine
The technological Singularity

When will we have computers as capable as the brain?

... Although AI's impact on society will accelerate further ... it will be a while before we will be able to holistically answer (that) question.

https://spectrum.ieee.org/computing/software/human-level-ai-is-right-around-the-corner-or-hundreds-of-years-away

2120
2080
2040

Robotic Decision Making
Augmented Reality
Internet of Things
Telemonitoring

Artificial Intelligence

… When will we have computers as capable as the brain? …
Clinical decision making
Augmented reality
Internet of Things
Telemonitoring

Internet of things

Nano-drug delivery

Targeted Delivery

Nano-robot surgeon
Surgical robots


Anesthesia robots

Drones

http://bionics.ucla.edu/research/surgery_project_11.html

Genomic medicine

http://www.practicalgenomics.com/2015/06/25/1305-137
The changing face of medicine

Drivers for change

- Changing demographics
- Rising healthcare bills
- Evolution of functional medicine

Drivers for change

- Changing demographics
Drivers for change

- Changing demographics

Rising number of surgical cases
1/4th population have long term conditions
1/5th post surgical patients require ICU
4/5th mortality in the high risk group

≈ US$ 8 Trillions
Global spending on healthcare in 2013

≈ US$ 18 Trillions
Global spending on healthcare in 2040
Drivers for change

- Changing demographics
- Rising healthcare bills
- Evolution of functional medicine

"a patient-centered approach that addresses the underlying cause of diseases"

CONVENTIONAL VS FUNCTIONAL MEDICINE

http://www.chwnv.com/blog/what-is-functional-medicine
Drivers for change

- Changing demographics
- Rising healthcare bills
- Evolution of functional medicine

Reduced sickness may mean less number of operations, and technology may reduce the degree of anesthetic involvement.

Evolution of perioperative medicine

"Unless we re-engage with the wards to provide care before and after surgery, we will lose relevance. A retreat to the operating theatre will be to the detriment of the specialty."

Evolution of perioperative medicine

Anesthesia assessment before surgery
Exercise testing, and preparation
Enhanced recovery after surgery
Integrated care for the elderly

PERIOPERATIVE MEDICINE
THE PATHWAY TO BETTER SURGICAL CARE
Evolution of perioperative medicine

“Our mission is to transform the way care is delivered across the perioperative continuum by breaking down the silos in our healthcare system.”

Your job is at risk

Resilient jobs:
- jobs that involve genuine creativity
- occupations involving building complex relationships with people
- jobs that are highly unpredictable

Future of employment

THANKS!
Any questions?