



Digital Platforms and Innovations for Surgical Research and Education

Alaa El-Hussuna

(M.B.Ch.B, M.Sc.,Ph.D.)

Associate professor of surgery (Denmark)

*Leader of **OpenSourceResearch** organisation*

*Chairperson **European Society of Colo-Prctology's** cohort studies committee*

*Member of surgical steering committee in **European Crohn Colitis Organisation***

 **YouTube** Dr. Alaa El-Hussuna

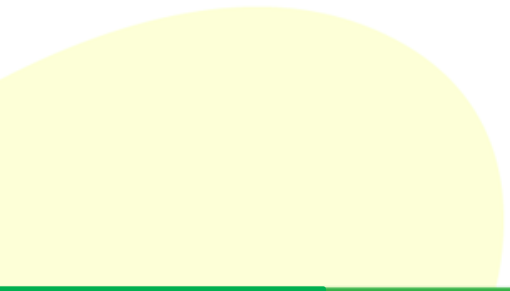
 **LinkedIn** alaael-hussuna

 **@AlaaEI_Hussuna**





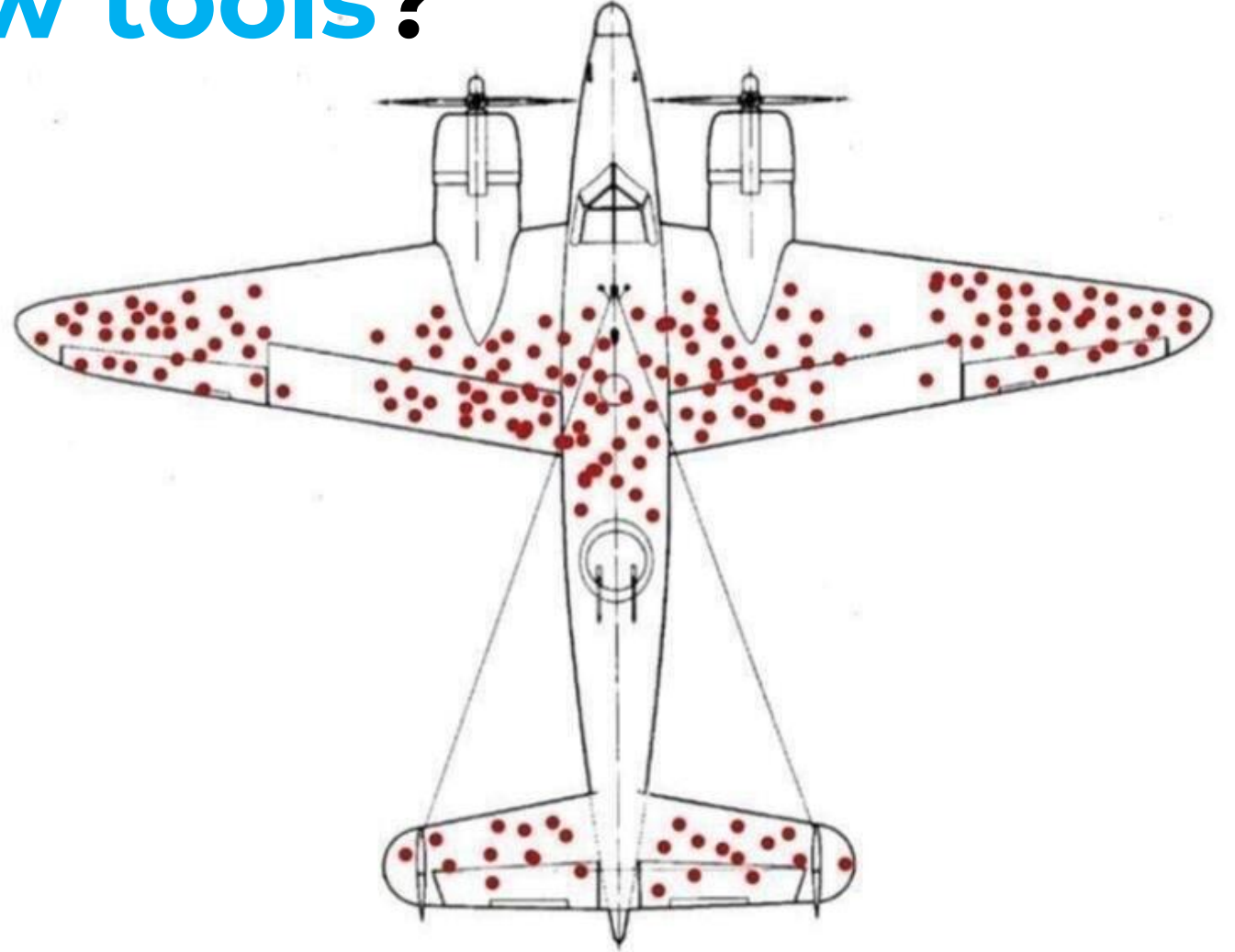
Conflict of interests: None





Why we need **new tools**?

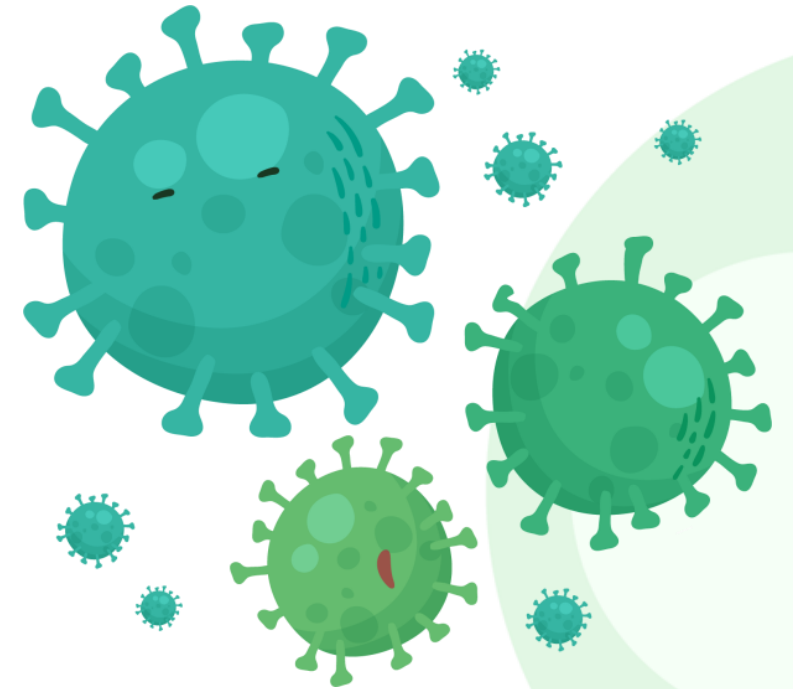
The story behind the data is more important than the data itself





Why we need new tools?

Traditional research methodology could NOT provide the badly needed evidence for policy makers e.g. Covid-19 pandemic



Reference:


OpenSourceResearch Collaboration 2019. Biological Treatment and the Potential Risk of Adverse Postoperative Outcome in Patients With Inflammatory Bowel Disease. *Crohn's & Colitis* 360.



Why we need **new tools**?



RESEARCH

 OPEN ACCESS

Avoidable waste of research related to inadequate methods in clinical trials

Youri Yordanov,^{1, 2} Agnes Dechartres,^{1, 3, 4} Raphaël Porcher,^{1, 3, 4} Isabelle Boutron,^{1, 3, 4, 5} Douglas G Altman,⁶ Philippe Ravaud^{1, 3, 4, 5, 7}



An important burden of wasted research is related to **inadequate methods**
This waste could be partly avoided by simple and inexpensive adjustments

Research

Original Investigation

Reanalyses of Randomized Clinical Trial Data

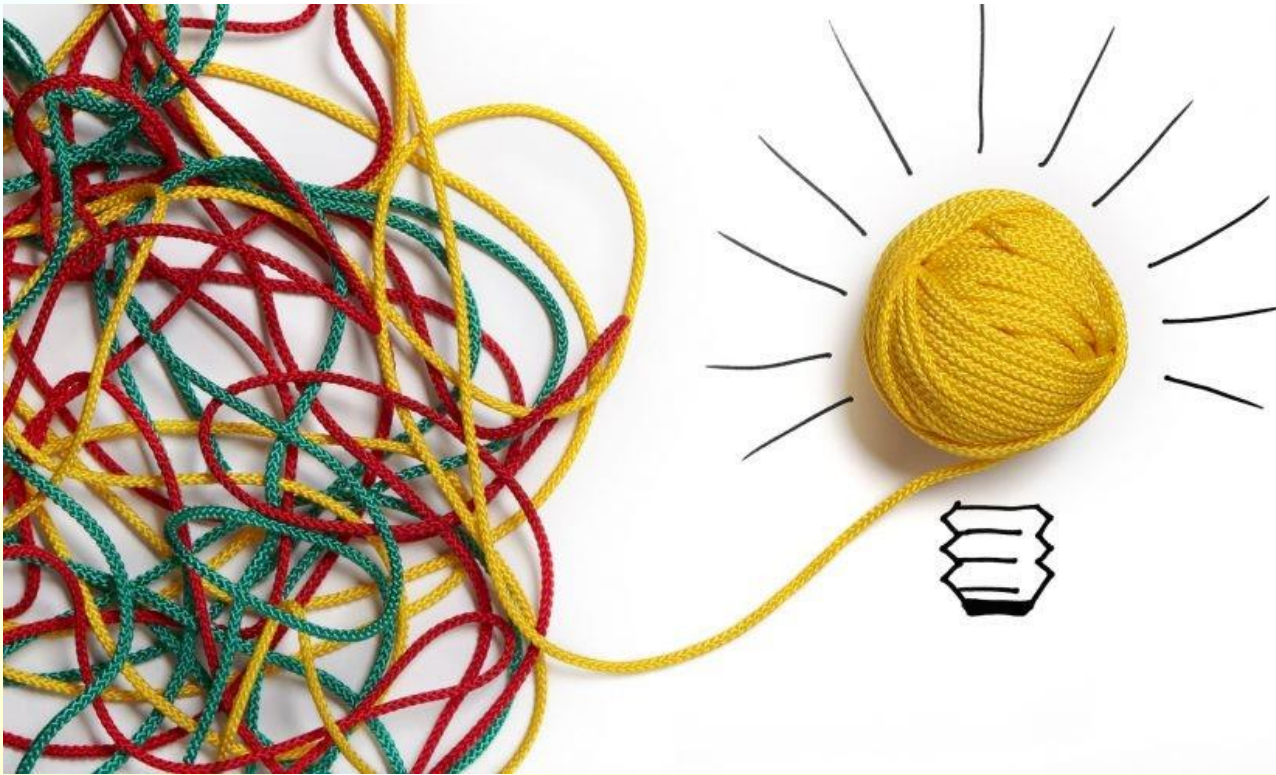
Shanil Ebrahim, PhD; Zahra N. Sohani, MSc; Luis Montoya, DDS; Arnav Agarwal, BSc; Kristian Thorlund, PhD; Edward J. Mills, PhD; John P. A. Ioannidis, MD, DSc

Thirty-five percent of published re-analyses led to changes in findings that implied conclusions **different** from those of the original article about the types and number of patients who should be treated





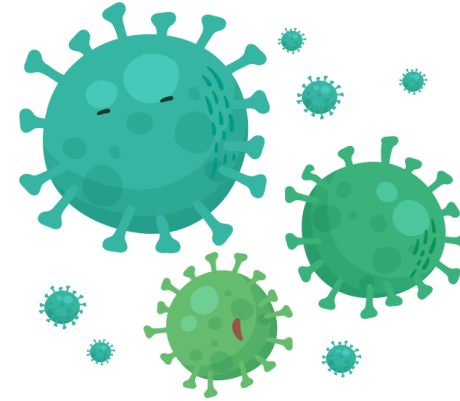
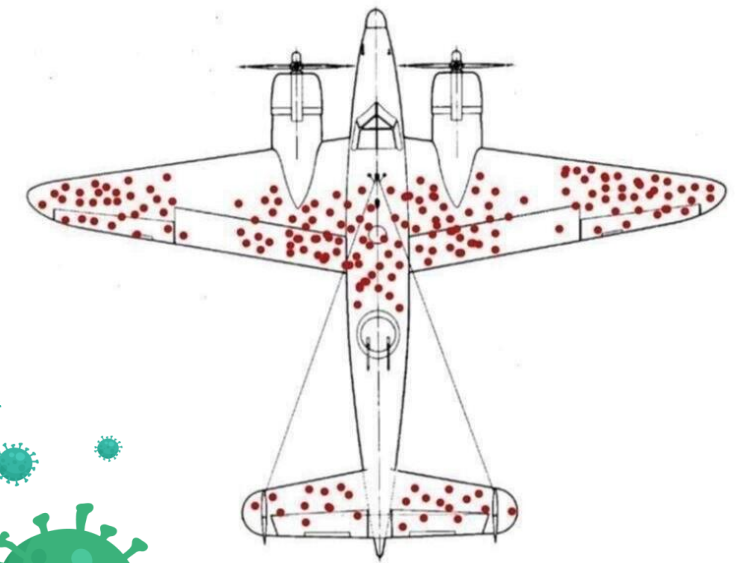
Clinical research is **complex** undertaking
We need **new approach** to clinical research



Why we need OSRC?

IT revolutionized the world of banking, e-commerce and tourism.

IT can also provide innovative research tools for medical research



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What is OSRC?

- Platform to explore, develop, test, validate and disseminate new research tools. Examples:

- Computer vision to analyze surgical video films
- Machine learning to predict patterns of blood supply to colorectal anastomosis
- Synthetic and augmented data to adjust for bias
- Crowd science and patients' involvement in research
- Computer simulation models to assess surgical intervention

- Incubator of new research ideas



Reference:

OpenSourceResearch Collaboration 2021. Information Technologies to Support Research: Challenges and Action Plan. EC Gastroenterology and Digestive





OpenSourceResearch

Implementing information technologies
in medical research



- **Identify** challenges in traditional research
- **Seek** solutions based on information technologies
- **Implement** information technologies in medical research



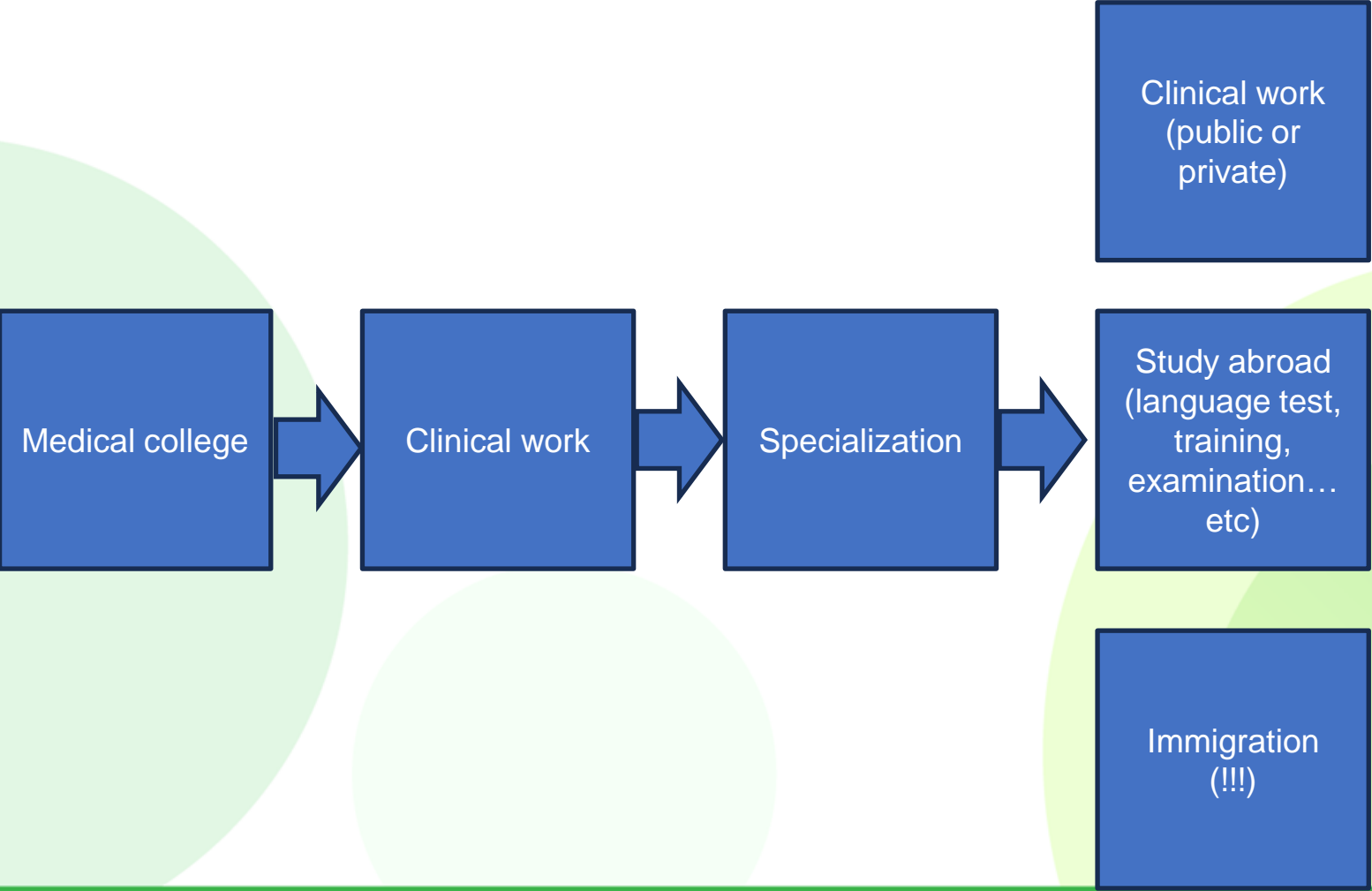


Why should you consider joining OSRC?





Ceiling



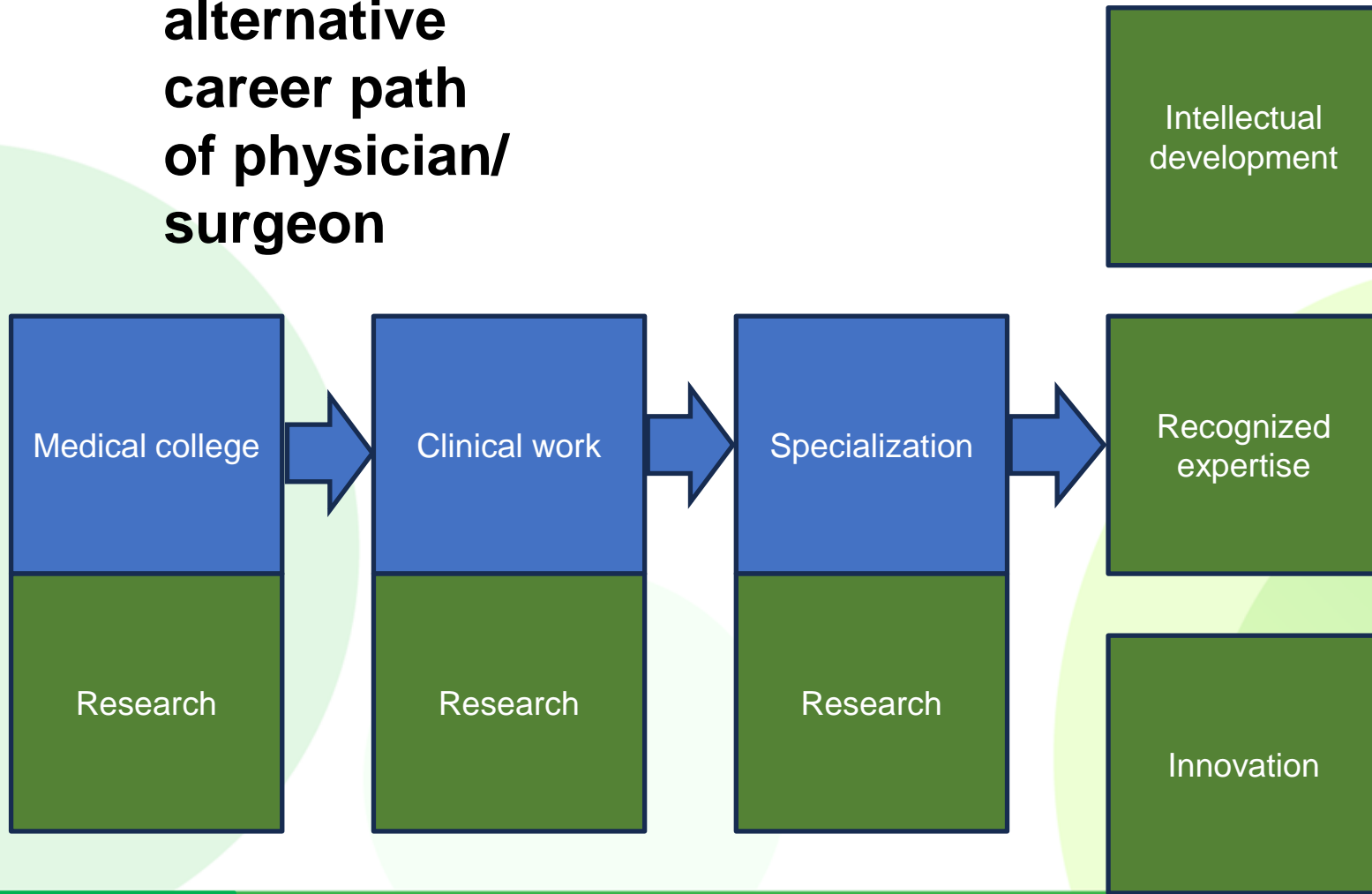
Limits

The career path of physician/surgeon





The alternative career path of physician/surgeon







International | Marginal utilitarianism

To help save the world, become a banker not a doctor

Better than the obvious choices may be a lucrative job, allowing generous charitable gifts



How can OSRC help?



Expectations

HOW

why

Fee



Why you need these tests?
English skills to understand academic writing, produce scholarly writing & communicate effectively during the study/work

English Proficiency Tests e.g. IELTS & TOEFL

Work



Why you need research proficiency?
To access study/work
To build startup
To gain knowledge about the scientific approach to problem solving

Open Source Research Collaboration

Access education/work
Get **knowledge** about the language and culture

Access education/work
Get **knowledge** about research, organisation, communication, leadership & administration





Get involved in OSRC?

- OSRC for senior members:
 - Networking **hub** with access to researchers, academia and industry
 - **Sandbox** to experiment new tools to conduct medical research
 - **Incubator** for startups
 - **Partner** in funding application
 - **Leadership opportunities** (projects, committees, crowd science clusters & more)



Reference:
OpenSourceResearch Collaboration website: www.osrc.network



Get involved in OSRC?

- OSRC for junior members:
 - **Research** (basic, clinical, IT & other types of research)
 - **Organisation** (organising boot camps, courses, workshops ...)
 - **Teaching** (boot camps, courses, workshops & other events)
 - **Skills in** Fund applications, communication & administration
 - **Leadership** (projects, committees, crowd science clusters...)



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How does OSRC work?

- OSRC non-profit, international research organisation use open-source products and embraces multi-disciplinary team approach to:
 - Academic research
 - Boot camps, courses, workshops
 - International collaboration
 - Raise public awareness about challenges in medical research
 - ...and more
- Spin off StartUps based on academic research



History of OSRC



- **2018-2020 Twitter crowd-science projects:**

- Biological treatment and postoperative outcome in IBD
- Patient Reported Outcome Measures in colorectal surgery

- **2021 establishment of the organisation:**

- Constitution
- Registrations (Danish non-profit organisations register, tax, bank...etc)
- Website

The screenshot shows the journal's interface with the following elements:

- Header:** "CROHN'S & COLITIS 360" logo and "CROHN'S & COLITIS FOUNDATION" text.
- Navigation:** "Issues", "Advance articles", "Submit", "Alerts", "About" menu items and a search bar.
- Article Content:**
 - Article Contents:** "Abstract"
 - ACCEPTED MANUSCRIPT:** Title "Biological treatment and the potential risk of adverse postoperative outcome in patients with inflammatory bowel disease: An open source expert panel review of the current literature and future perspectives".
 - Contributors:** A list of names including Alaa El-Hussaini, Pir Myreid, Stefan D. Holubar, Paulo G. Kotze, Graham Mackenzie, Gianluca Pellino, Des Winter, Justin Davies, Jonat Negoi, Perbinder Grewal, Gaetano Gallo, Kapil Sahnan, Ines Rubio-Perez, Daniel Clerc, Nicolas Desmurtres, James Glasbey, Miguel Reguero, Ahmed E. Sherif, Peter Neary, Francesco Pata, Mark Silverberg, Stefan Clemont, Sami A. Chadi, Sameh Emile, Nicolas Buchs, Monica Millan, Ana Minaya-Bravo, Hosam Eliska, Veronica De Simone, Mustafa Shalaby, Celestino Gutierrez, Chuan Chen, Ali Yalçınkaya, David Rivadeneira, Alessandro Sturiale, Naha Yassin, Antonino Spinelli, Jay Warusavitame, Argyrios Ioannidis, Steven Wezner, Julio Mayo.
 - Abstract:** "There is widespread concern that treatment with biologics agents may be associated with sub-optimal postoperative outcome after surgery for inflammatory bowel diseases (IBD)."
 - Background:** (Text partially obscured)
 - Aim:** "We aimed to search and analyse the literature regarding the potential association of biologic treatment on adverse postoperative outcome in patients with IBD. We used the subject as a case in point for surgical research. The aim was not to conduct a new systematic review."
- Right Sidebar:**
 - IBD & CHILDREN VIRTUAL ISSUE:** "Free to view", "IBD INFLAMMATORY BOWEL DISEASES*", "READ NOW".
 - View Metrics:** "1 View Metrics".
 - Email alerts:** "New issue alert", "In progress issue alert", "Advance article alerts", "Article activity alert".
 - Footer:** "Receive exclusive offers and updates from Oxford Academic".

“There is a magic in every beginning” Hermann Hesse

Team OSRC



1078
members
(July 2024)



**OSRC family
is growing
from day to
day**

Senior medical
researchers



Data scientists &
IT engineers



IT & medical
students



Reference:
OpenSourceResearch Collaboration website: www.osrc.network





Where is OSRC is today?

- At **academic** research:

- **3** big ongoing research projects
- **27** publications
- **6** studies work-in-progress
- **20** Partners

- At securing **funds**

- StartUps funds
- EU funds
- Educational activities
- Think-tank

Research

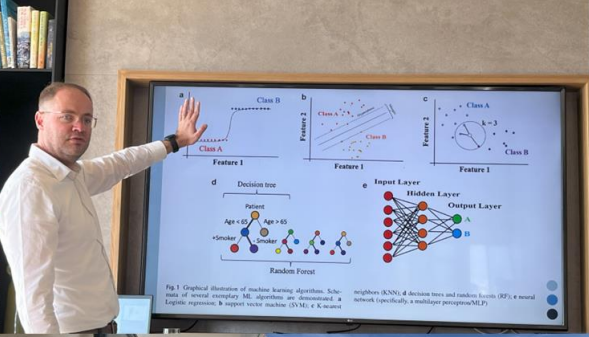
OSRC

StartUps

OSRC



OSRC's mission : Breeding innovators through workshops, courses and research





More about innovation in **Surgery?**



OSRC. network



Website: <https://osrc.network>
Email: contact@osrc.network
LinkedIn: <https://www.linkedin.com/company/osrc>
Twitter: <https://twitter.com/opsore>

