Building a sustainable ecosystem of evidence

New challenges after the pandemic

Nino Cartabellotta
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GIMBE
EVIDENCE FOR HEALTH

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PERSONAL VIEW

The sins of expertness and a proposal for redemption

Two decades ago I was an expert on the subject of compliance with therapeutic regimens. I enjoyed the topic enormously, lectured internationally on it, had my opinion sought by other researchers and research institutes, and my colleagues and I ran international compliance symposiaums and wrote two books, chapters for several others, and dozens of papers about it. Whether at a meeting or in print, I was always given the last word on the matter.

It then dawned on me that experts like me commit two sins that retard the advance of science and harm the young. Firstly, adding our prestige to our opinions gives the latter far greater persuasive power than is healthy.

There are still far more experts around than is necessary. An expert in an old field with a new name: evidence based medicine. Because interest in these ideas was so great, especially among young clinicians working in the world, my writing and editing was published in several languages, and when I was not running a clinical service I was out of town demonstrating evidence based medicine at the bedside and lecturing about it (over 100 times in 1998).

Although acceptance of my views was not universal, once again my conclusions came to be given too much credence and my opinions too much weight. And newcomers to the field who regarded me with affection faced an additional deterrent to challeng-

David L Sackett  director, Trout Research and Education Centre at Irish Lake, Markdale, Ontario, Canada
It then dawned on me that experts like me commit two sins that retard the advance of science and harm the young.

As before, I decided to get out of the way of the young people now entering this field,
Building a sustainable ecosystem of evidence

New challenges after the pandemic

Tiziano Innocenti
GIMBE Foundation
Outline

• Background
• Analysis
• Challenges
• Proposal
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COMMENTARY

The ecosystem of evidence cannot thrive without efficiency of knowledge generation, synthesis, and translation

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A community of **living organisms** in conjunction with the **non-living components** of their **environment** (air, water, mineral soil), interacting as a system.
The ecosystem of evidence

An ecosystem influenced by:

- **Living organisms**: stakeholders, with their competition, collaboration and conflicts of interest
- **Environment**: social, cultural, economic, political context
- **Non-living component**: evidence
Ecosystem of evidence

Generation → Synthesis

Translation
Outline

- Background
- Analysis
- Challenges
- Proposal
Editorial

Evidence-based medicine


Gordon H. Guyatt, MD, MSc
Progress in evidence-based medicine: a quarter century on

Benjamin Djulbegovic, Gordon H Guyatt

In response to limitations in the understanding and use of published evidence, evidence-based medicine (EBM) began as a movement in the early 1990s. EBM’s initial focus was on educating clinicians in the understanding and use of published literature to optimise clinical care, including the science of systematic reviews. EBM progressed to recognise limitations of evidence alone, and has increasingly stressed the need to combine critical appraisal of the evidence with patient’s values and preferences through shared decision making. In another progress, EBM incorporated and further developed the science of producing trustworthy clinical practice guidelines pioneered by investigators in the 1980s. EBM’s enduring contributions to clinical medicine include placing the practice of medicine on a solid scientific basis, the development of more sophisticated hierarchies of evidence, the recognition of the crucial role of patient values and preferences in clinical decision making, and the development of the methodology for generating trustworthy recommendations.

Lancet 2017; 390: 415-23
What are the effects of teaching Evidence-Based Health Care (EBHC) at different levels of health professions education? An updated overview of systematic reviews

Malgorzata M. Bala1,6*, Tina Pklopec Periçić2, Joanna Zajac1, Anke Rohwer3, Jitka Klugarova4, Maritta Välimäki5,6, Tella Lantta5, Luca Pingani7,8,9, Miloslav Klugar4, Mike Clarke3,10, Taryn Young3
COVID-19 ARTICLES

Evidence-based medicine in times of crisis

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Clinical Trials in Global Health 4

How COVID-19 has fundamentally changed clinical research in global health

Jay J H Park, Robin Mogg, Gerald E Smith, Etheldreda Nakimuli-Mpungu, Fyezah Jehan, Craig R Rayner, Jeanine Condo, Eric H Decloedt, Jean B Nachega, Gilmar Reis, Edward J Mills

Lancet Glob Health 2021; 9: e711–20
Adapt or die: how the pandemic made the shift from EBM to EBM+ more urgent

Trisha Greenhalgh, David Fisman, Danielle J Cane, Matthew Oliver, Chandini Raina Macintyre

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COMMENTSARY

Methodology over metrics: current scientific standards are a disservice to patients and society

Ben Van Calster\textsuperscript{a,b,c,*}, Laure Wynants\textsuperscript{a,c,d}, Richard D Riley\textsuperscript{e}, Maarten van Smeden\textsuperscript{f}, Gary S Collins\textsuperscript{g,h,i}
Challenges and The way forward
Ecosystem of evidence

- Generation
- Synthesis
- Translation
Evidence Generation

- REWARD recommendations
- James Lind Alliance
- EBR Network
- Reporting guidelines for protocol and studies (SPIRIT, CONSORT, ...)
- EQUATOR Network
- Trial registration: AllTrials, WHO and ICMJE statement, WHO ICTRP
- ...
Evidence Generation

- Extending both WHO statement and ICMJE policies concerning clinical trials to register observational studies
- Exploring ways to reduce the extreme fragmentation of regulation issues
- Exploiting all opportunities to increase the reproducibility of biomedical research
- We STILL need less publications and more high-quality evidence
Evidence Generation

- Complex interventions and complex systems need more flexible methods
- Need to provide similar opportunities to those in high-income countries for clinical trial research in low-income regions
- Observational and real-world evidence are underrepresented
- Need for structures and incentives to enable faster data sharing of anonymised datasets
- Scientific integrity is still a key issue
Evidence Synthesis

- Cochrane handbooks
- Reporting guidelines (PRISMA, AGREE-II, RIGHT, ...)
- GRADE method
- International efforts to help researchers and meta-researchers (e.g. PragMeta, Systematic Reviewlution)
- International standards: G-I-N, AGREE II, IOM
- New ways of working, and sharing high-quality evidence (e.g. MAGICapp)
SYSTEMATIC REVIEWS

- International policies to converge efforts on Cochrane reviews
- Extend the ICMJE recommendations on registration number mandatory for publication to systematic reviews
- Centralized database for (non Cochrane) high-quality systematic reviews
CLINICAL PRACTICE GUIDELINES

- International governance to avoid proliferation of low quality CPGs
- Better management of COIs according to G-I-N standards
- Central CPGs database searchable for quality criteria (AGREE II, G-I-N, IOM)
Traditional methods are not effective in rapidly collating, assessing, and synthesising evidence to inform decision-making

Duplication of systematic reviews

Funding (much of the work is being undertaken by crowdsourcing and volunteers)

Increase the reliability of alternative methodologies (rapid and living reviews)

Foster use of artificial intelligence/machine learning
The Registry of Methods and Tools for Evidence-Informed Decision Making

Click below to filter by the seven steps or the entire process

Search for...

Editorial

The paths from research to improved health outcomes

Paul Glasziou, MBBS, PhD
University of Oxford
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Brian Haynes, MD, PhD
McMaster University
Hamilton, Ontario, Canada
The pandemic has largely contributed to health inequalities

New evidence is often overwhelming and difficult to keep up with, particularly for low/middle income countries

Evidence is often conflicting or lacking consensus, or inadequate to inform in-country measures

A gap still persists between evidence-informed decision-making and policymakers' decisions

Lack of transparency surrounding the process for how decisions are ultimately made
The ultimate goal of EBHC

To improve health outcomes, patients’ experience and sustainability of healthcare systems by integrating the best evidence into clinical and policy decisions and patients’ choices
Ecosystem of Evidence

Generation  Synthesis  Translation
Lack of governance

- Too many standards (statements, rules, tools) of variable quality in attempt to improve generation, synthesis and translation of evidence
- Little evidence about their implementation status and effects
- Lack of a global vision of real needs
Outline

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The proposal
To set up the GLocal OBservatory on Ecosystem of Evidence (GLOBEE) to monitor needs, publication and implementation of international standards aimed to improve generation, synthesis and translation of evidence into clinical and health policy decisions as well as into patients’ choices.
GLOBEE: main steps

1. Mapping critical issues that affect the 3 pillars of the ecosystem of evidence
2. Mapping international standards (statements, rules, tools)
   - identifying the ones already available
   - proposing new ones if needed
3. Monitoring implementation of the international standards:
   - primary research → systematic reviews
   - institutional reports
   - other
4. Suggesting updates of the international standards
Re-start?

Are this project, its purposes and challenges still up-to-date?
The proposal

www.globee.online
THANK YOU