Cochrane Rehabilitation

Accelerating Knowledge to Practice:
Evidence we can trust

Stefano Negrini

Chair of Physical and Rehabilitation Medicine
University of Brescia, Don Gnocchi Foundation
Director of Cochrane Rehabilitation

Trusted evidence.
Informed decisions.
Better health.

Cochrane Rehabilitation

Thank you

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Trusted evidence.
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Disclosure

Director of Cochrane Rehabilitation

European Journal of Physical and Rehabilitation Medicine: congress expenses

ISICO (Italian Scientific Spine Institute): stock

Medtronic: consultant

Janssen Pharmaceutical: advisory board

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Disclosure

I am a Juventus soccer fan

ISPRM 2017
11th International Society of Physical and Rehabilitation Medicine World Congress
Buenos Aires, Argentina | April 30 – May 4

11TH INTERNATIONAL SOCIETY OF PHYSICAL & REHABILITATION MEDICINE (ISPRM) WORLD CONGRESS

Sociedad Argentina de Medicina Física y Rehabilitación

Buenos Aires, Argentina
April 30 - May 4, 2017

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Disclosure

We are in Argentina, and soccer is relevant !

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Disclosure

Today, in 45 minutes:

Monaco-Juventus

Champions League – first semi-final

I will not be too long: promised !

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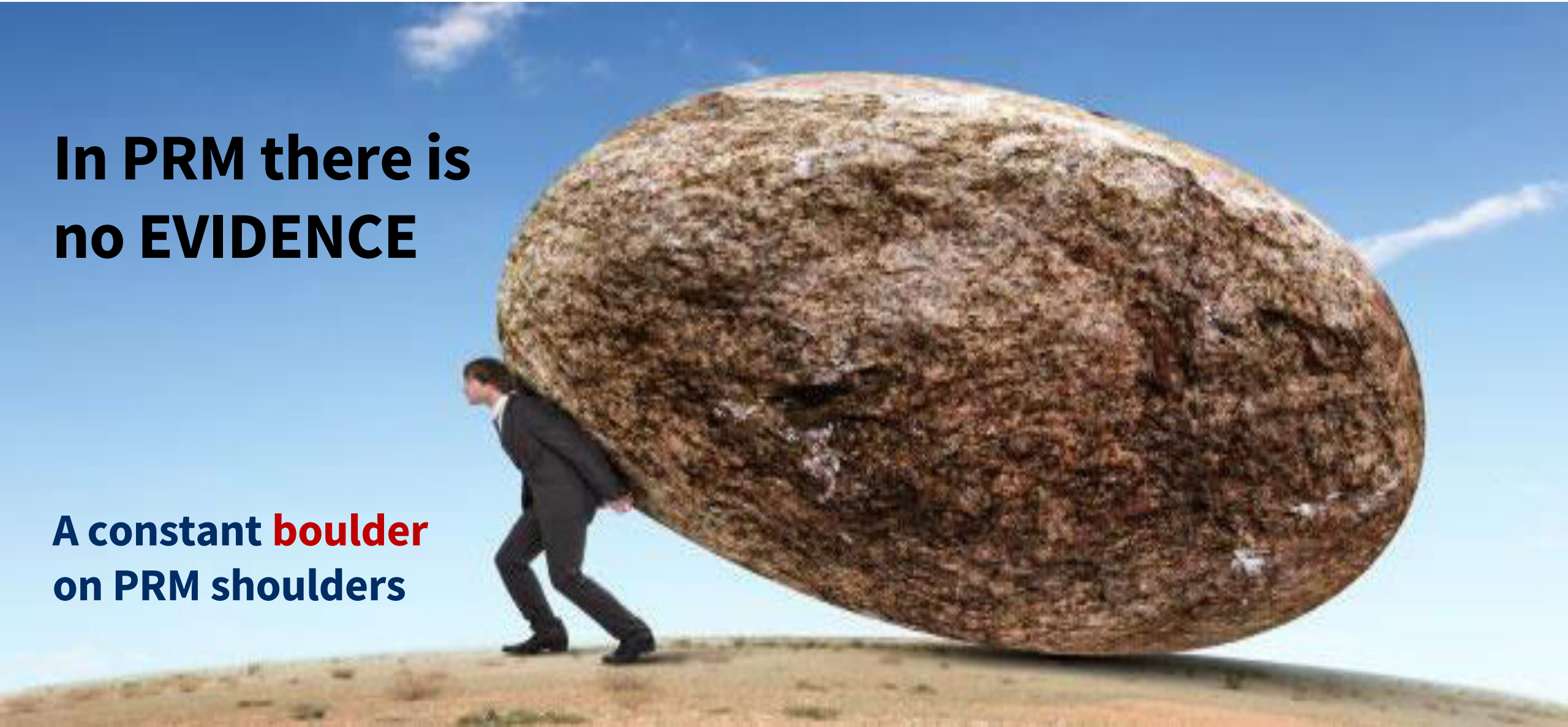
In PRM there is no EVIDENCE



A constant boulder on PRM shoulders

Overview

Evidence Based Medicine (EBM)

- The origin and reason for EBM
- Cochrane: the Gold Standard of EBM

Physical and Rehabilitation Medicine (PRM) and EBM

- PRM vs other medical specialties
- Problems with evidence generation in PRM
- State of research in PRM

Implementation of EBM in PRM

- Knowledge Translation
- Cochrane Rehabilitation

Some solutions for EBM in PRM

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Some solutions for EBM in PRM

Charles II, King of England and Scotland (1685)

He had a stroke and was treated by the best physicians

- 16 ounces bloodletting
- Not allowed to sleep making him sitting
- Glass cups on the shoulders
- Shoulders scarification for 8 ounces more of bloodletting
- Emetics and laxative at high dosage, with repeated clysters
- Shaven and sticked needles in the head
- White-hot cautery

Luckily the king died without awakening

The so-called tradition-based official medicine

Dr. Lind and scarvy (1747)

Scarvy: cause of death in sea explorations

Treatments mandated by Dr Lind advisors and paiers:

- Royal College of Physicians: sulfuric acid
- Admiralty: vinegar

The idea:

- 12 patients, same diet, 6 groups of 2
  - sulfuric acid,
  - vinegar,
  - cider,
  - sea water,
  - nutmeg,
  - 2 oranges and 1 lemon

First controlled study in history

Thalidomide (1961)

Drug for nausea during pregnancy

Proper studies were performed before marketing

First reports of phocomelias archived as “random events”

Reports increased, but the drug company did not disclose them until a scandal broke

Mandatory to collect data on adverse events and report to independent governmental avencies (like FDA)

Dr. Spock and Sudden Infant Death Syndrome

Renewed pediatrician, developer of a new educational model

Expert statement: “Do not let infants sleep on their back to avoid choking on the vomit and to avoid compression of the head always on the same side” (1956)

Studies about supine vs prone lying in infants:

- First small RCT (1965): no differences
- First serious RCT (1985): better supine
- Cochrane (2005): prone 4.15 (3.3-5.3) increased risk of SIDS

Importance of RCTs and metanalysis

«Official» Medicine today

- King Charles II
- Dr Lind
- Thalidomide
- Sudden Infant Death Syndrome

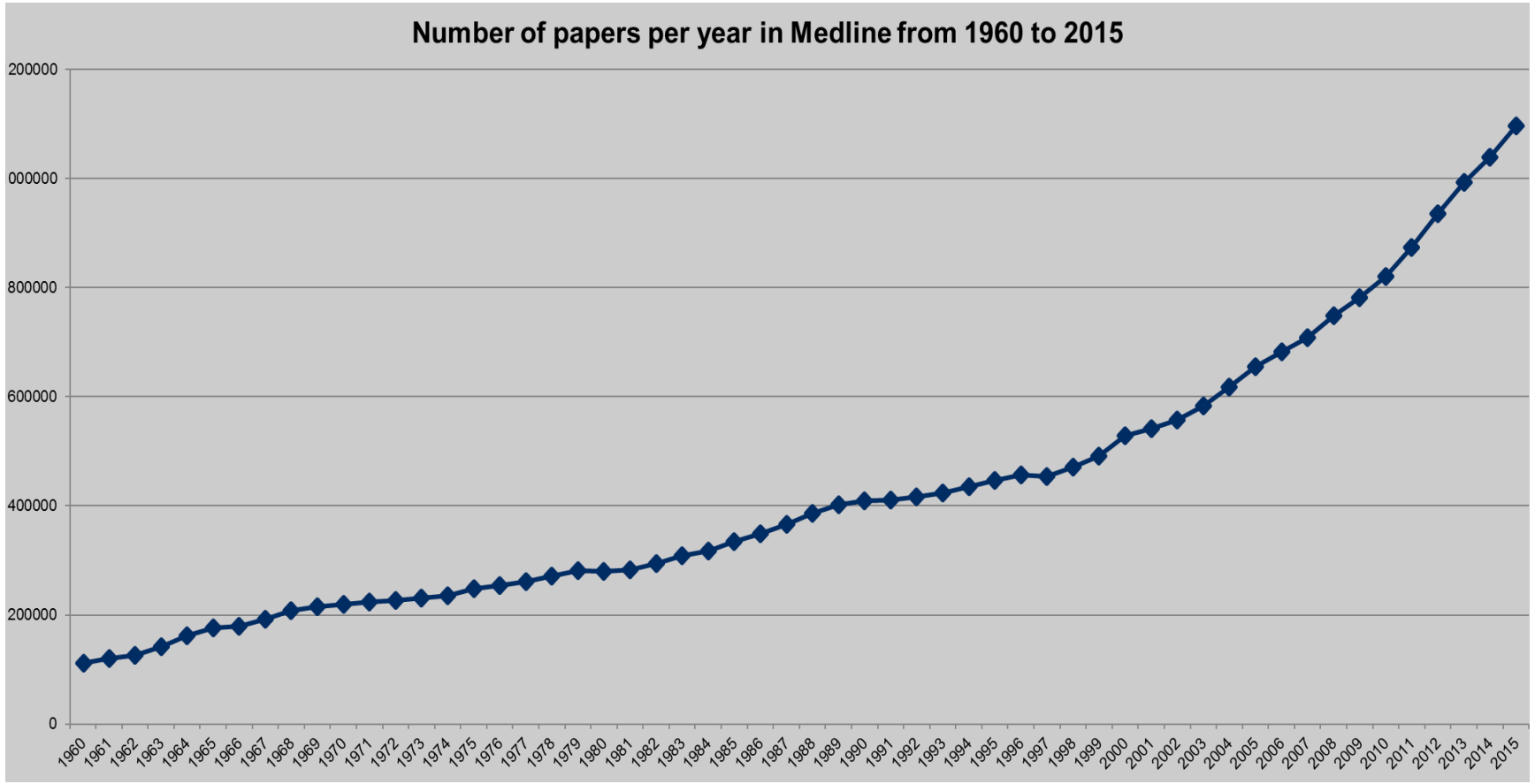
The methodology of “official medicine” comes from our history

Evidence Based Medicine

The explicit, conscientious, and judicious use of the current best evidence in making decisions about the care of individual patients (and populations)

Sackett DL et al. Evidence based medicine: what it is and what it isn't. BMJ 1996; 312:71. doi: https://doi.org/10.1136/bmj.312.7023.71

Growth of studies in PubMed



Studies hierarchy

Evidence Based Clinical Practice

The integration of

- best research evidence
- with clinical expertise
- and patient values

Sackett DL et al. How to practice and teach EBM. Edinburgh: Churchill Livingstone (2000).

EBM is the last methodological achievement in the young history of medicine

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- Some notes on History of Medicine
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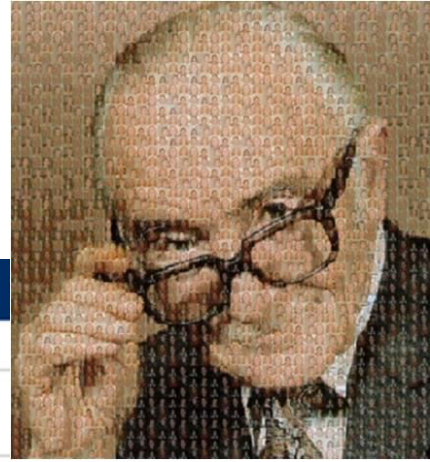

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Trusted evidence.
Informed decisions.
Better health.

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Our evidence | About us | Get involved | News and events | Cochrane Library ▶

Our evidence

Search...

See full list of our evidence.

Cochrane vision

A world of improved health where decisions about health and health care are informed by high-quality, relevant and up-to-date synthesized research evidence.

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What does Cochrane do ?

Cochrane gathers and summarizes the best evidence from research producing systematic reviews and meta-analysis including only Randomized Controlled Trials (RCTs).

Cochrane does not accept commercial or conflicted funding

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Cochrane Organization

Review Groups: systematic reviews

Methods Groups: development of methods for reviews

Centres: local knowledge translation

Fields and Networks: knowledge translation for a specific health community other than a condition

Why is Cochrane important ? An example

A physiotherapist

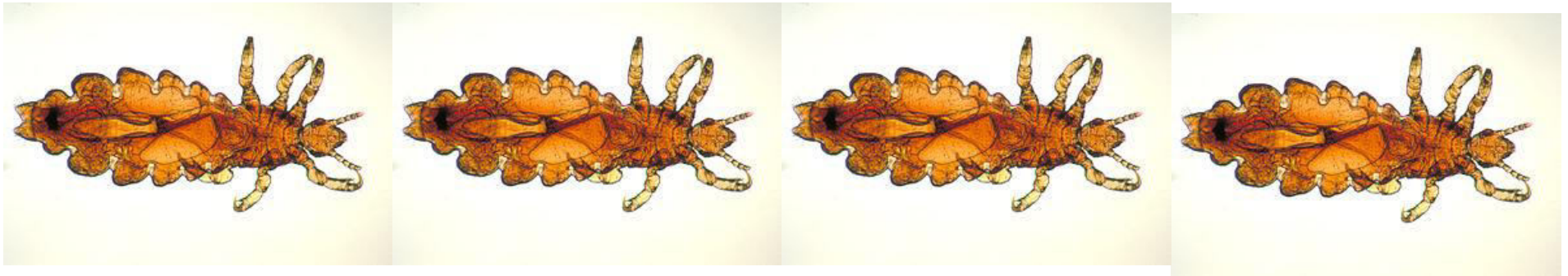
Two very nice daughters with long, blond hair

Pediculosis – head lice got at school

They tried all known popular remedies, but no success

Last solution: totally cut their hair

Suddenly an IDEA – why not to try to check with Cochrane ?



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Problem solved

Cochrane Database of Systematic Reviews

Interventions for treating head lice

Protocol | Intervention

Johannes C van der Wouden ✉,Tim Klootwijk,Laurence Le Cleach,Giao Do,Robert Vander Stichele, Arie Knuistingh Neven,Just AH Eekhof

First published: 5 October 2011

Editorial Group: Cochrane Infectious Diseases Group

DOI: 10.1002/14651858.CD009321 View/save citation

Cited by: 2 articles Refresh Citing literature

Now he is the author of 2 systematic reviews in his field of competence

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Cochrane and RCTs are the actual gold standard for a good EBM approach

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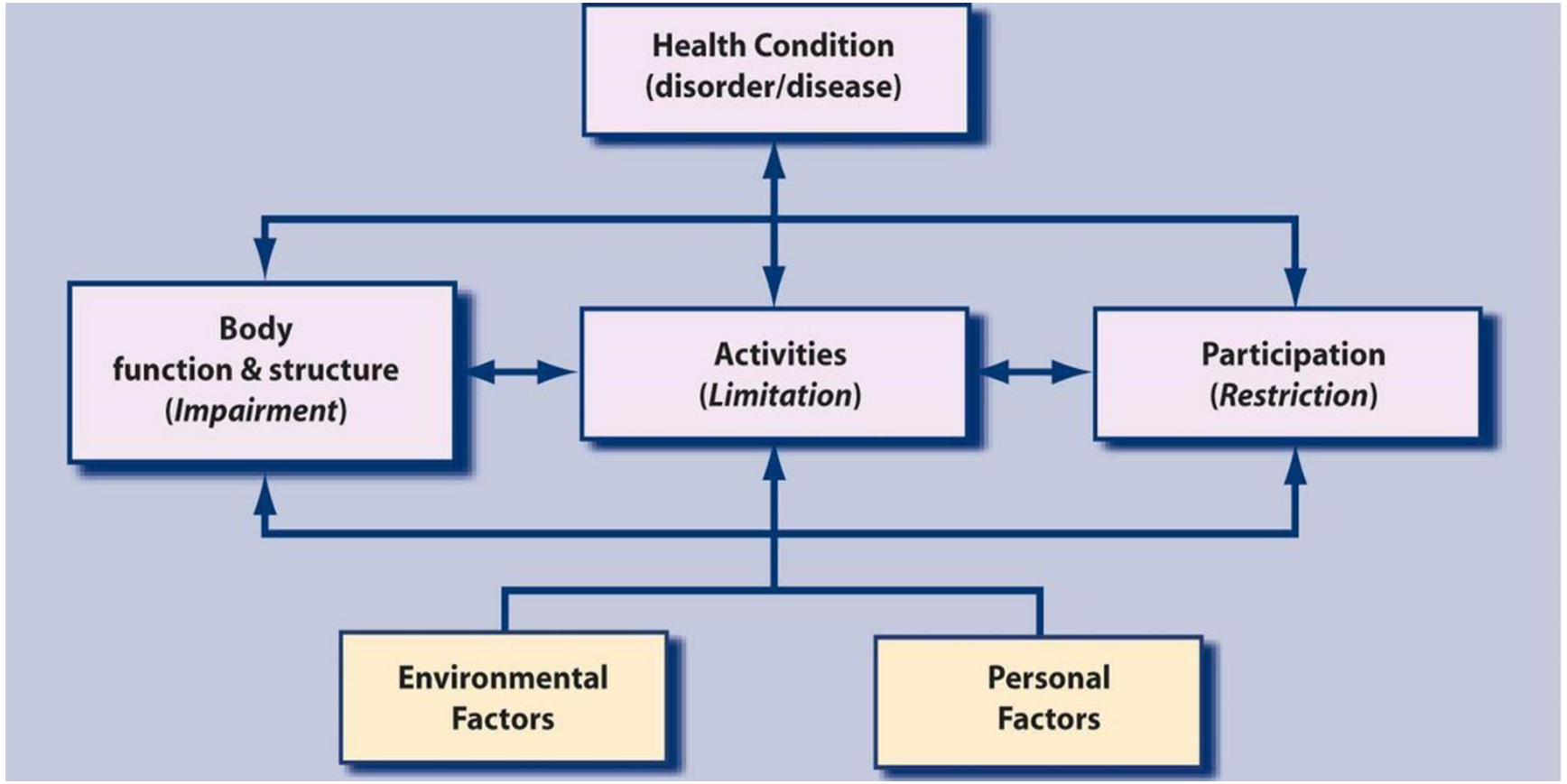
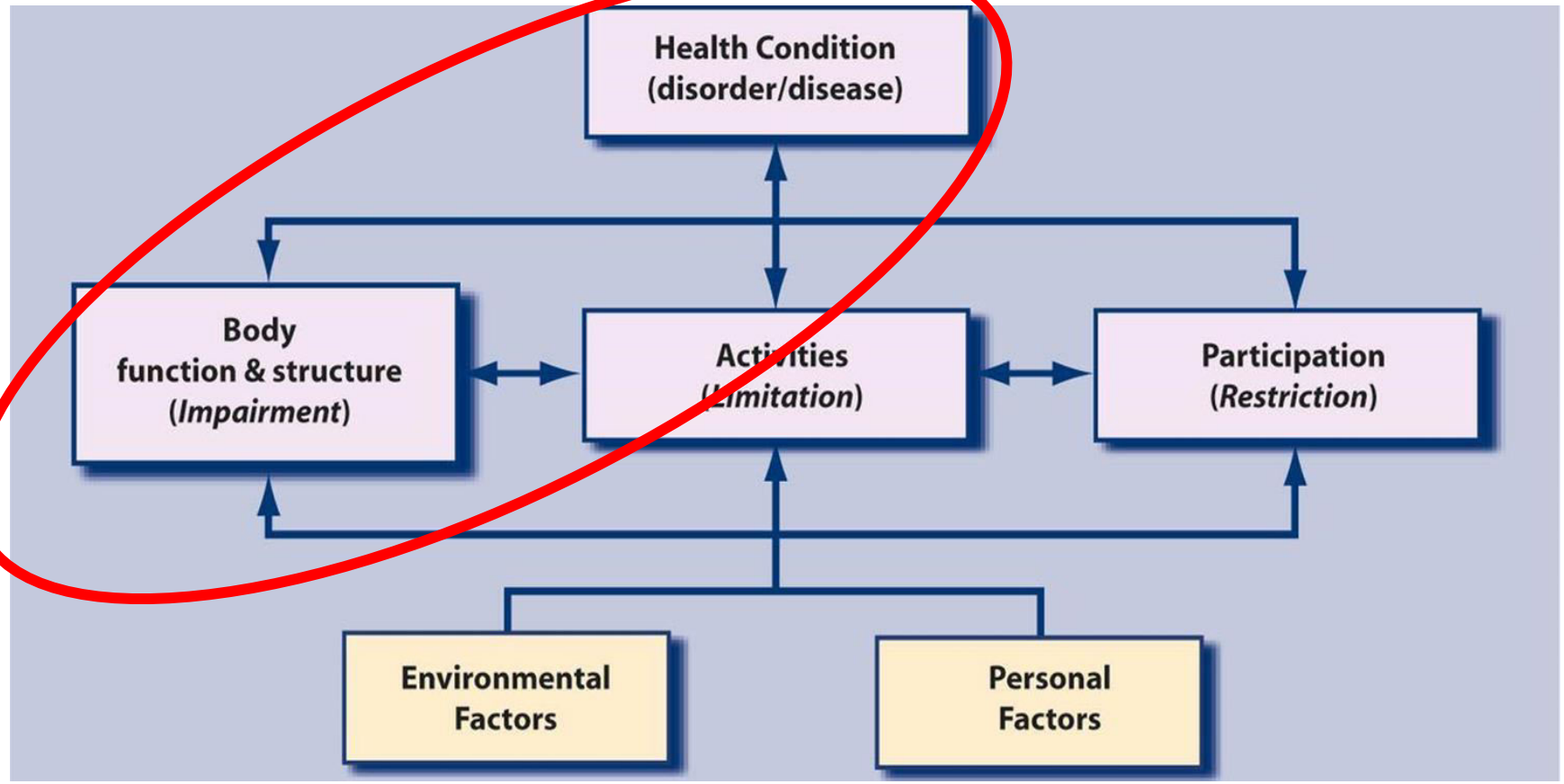
ICF biopsychosocial model (WHO)



European Bodies Alliance. White Book of Physical and Rehabilitation Medicine in Europe 3rd Ed. To be published in 2018

Classical medical specialties



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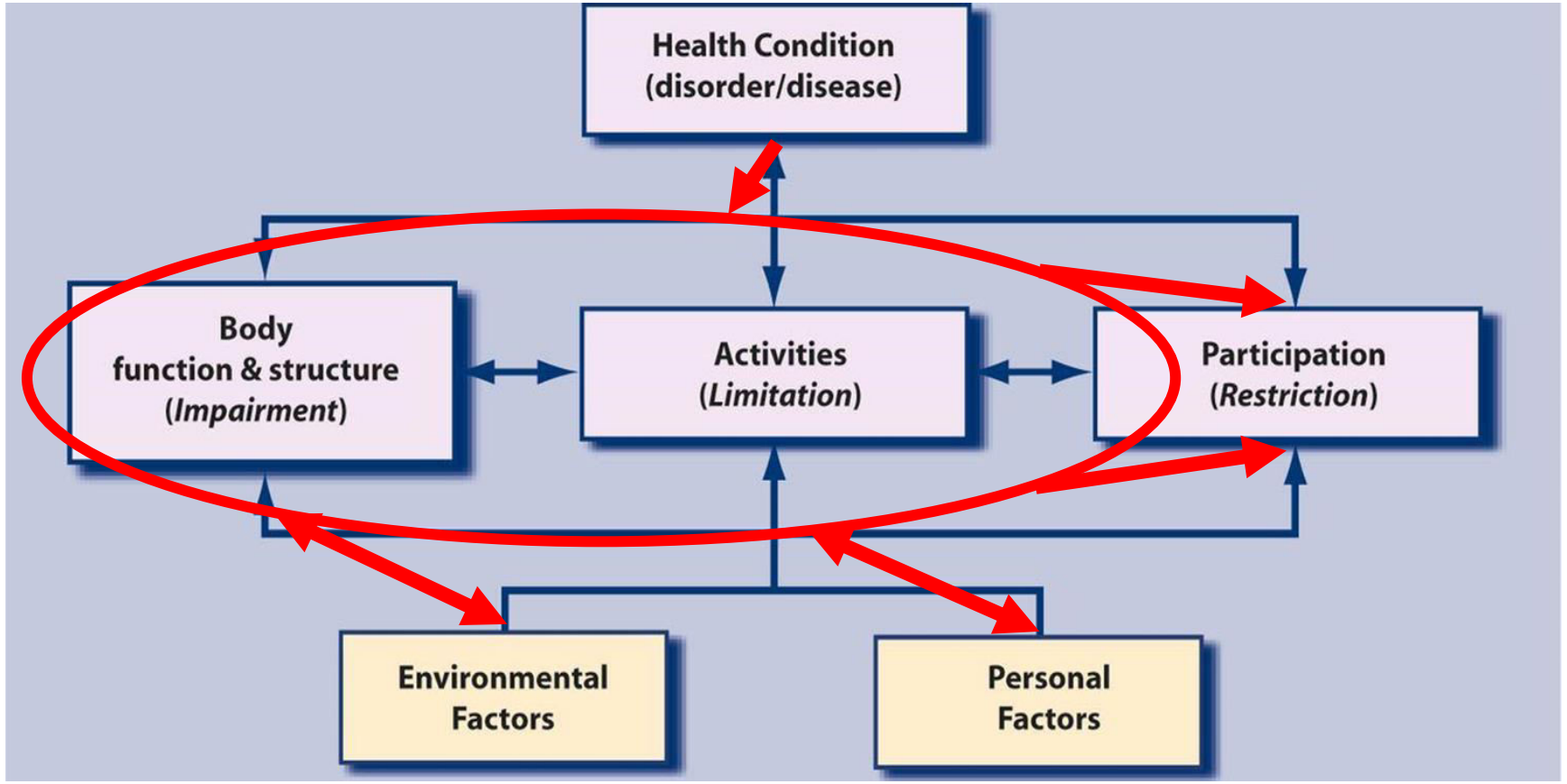
Physical and Rehabilitation Medicine



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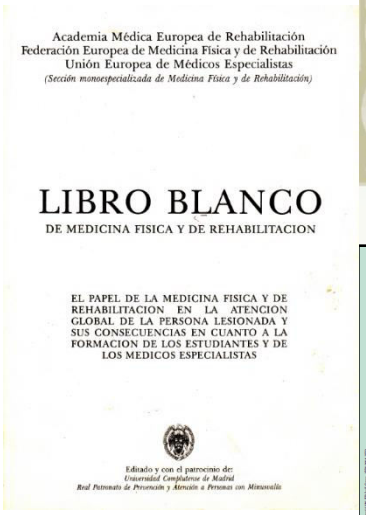
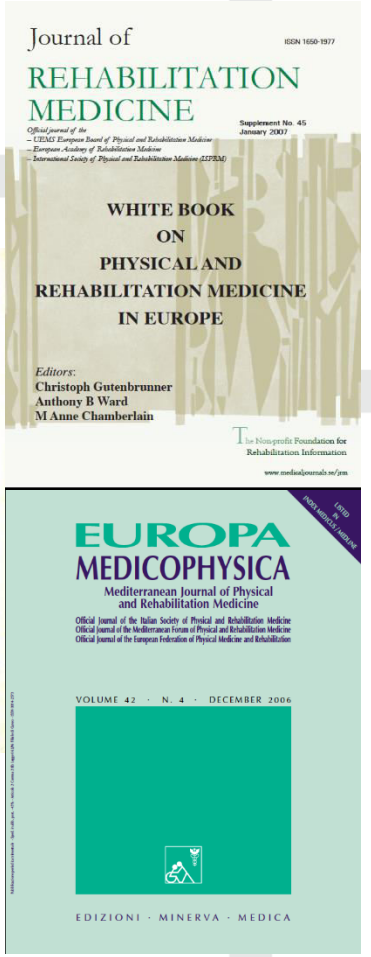
Core concepts of PRM

	Classical medicine	PRM specialty
Overall approach	Disease oriented	Person/functioning oriented (holism)
Diagnosis and prognosis	Medical	Functional and medical
Treatments	One modality at a time	Multimodal
Morbidities	Single	Multiple
Professional approach	Individual	Multi-professional team





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Low and Middle Income Countries (LMIC)

Disability:

- Different epidemiology
- Bi-directional link to poverty

Professional rehabilitation capacity

- Few professionals
- Few facilities

Different therapy interventions due to reduced resources

World Health Organization (WHO). Rehabilitation 2030: a call for action. 2017
World Health Organization (WHO). Disability Action Plan. 2014

PRM has specific challenges for EBM that must be faced

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Some solutions for EBM in PRM

Research problems in PRM

- Conception of the study → Ethical Committee Approval
- Design → Randomised Controlled Trials
- Design → Quasi Randomised Controlled Trials
- Design → Benchmarking Controlled Trials
- Design → Registries and clinical databases
- Setting → Community; Out-Inpatient
- Setting → Primary; Secondary; Tertiary
- Setting → Clinical; Research
- Setting → Environmental factors
- Population → Functional diagnosis
- Population → Multimorbidity
- Methods → ~~Outcomes~~
- Methods → Rehabilitation process

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32 biases in research

1. Bias in concepts
2. Definition bias
3. Bias in design
4. Bias in selection of subjects
5. Bias due to concomitant medication or concurrent disease
6. Instruction bias
7. Length bias
8. Bias in detection of cases
9. 'Lead-time' bias
10. Bias due to confounder
11. Contamination in controls
12. Berkson's bias
13. Bias in ascertainment or assessment
14. Interviewer bias or observer bias
15. Instrument bias
16. Hawthorne effect
17. Recall bias
18. Response bias
19. Repeat testing bias
20. Mid-course bias
21. Self-improvement effect
22. Digit preference
23. Bias due to nonresponse
24. Attrition bias
25. Bias in handling outliers
26. Recording bias
27. Bias in analysis
28. Bias due to lack of power
29. Interpretation bias
30. Reporting bias
31. Bias in presentation of results
32. Publication bias

Indrayan A. Basic Methods of Medical Research
3rd Ed. AITBS Publishers, Delhi

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Frequent biases in PRM: 13/32

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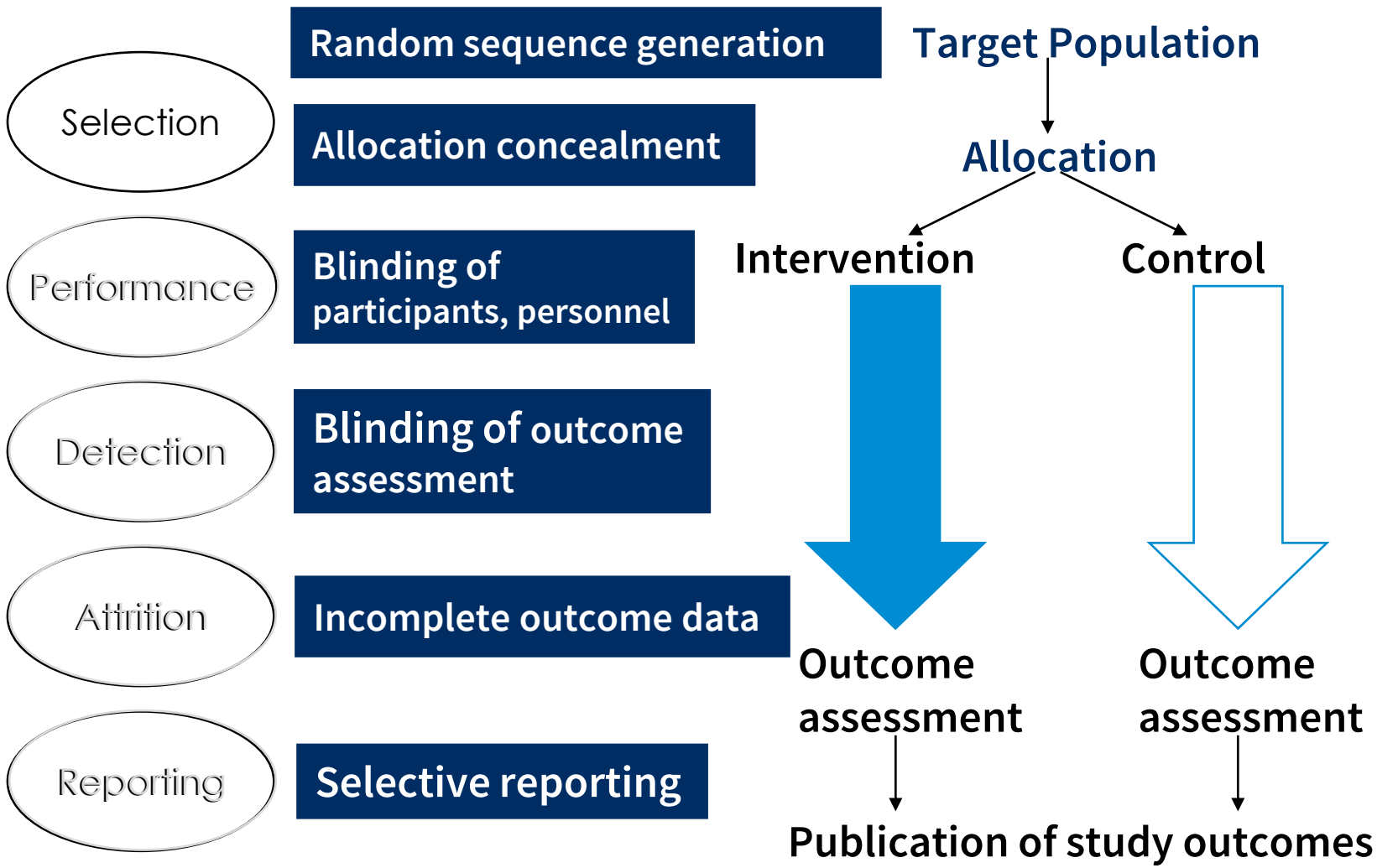

Cumpston M. Introduction to writing a Cochrane Review
http://training.cochrane.org/resource/introduction-writing-cochrane-review

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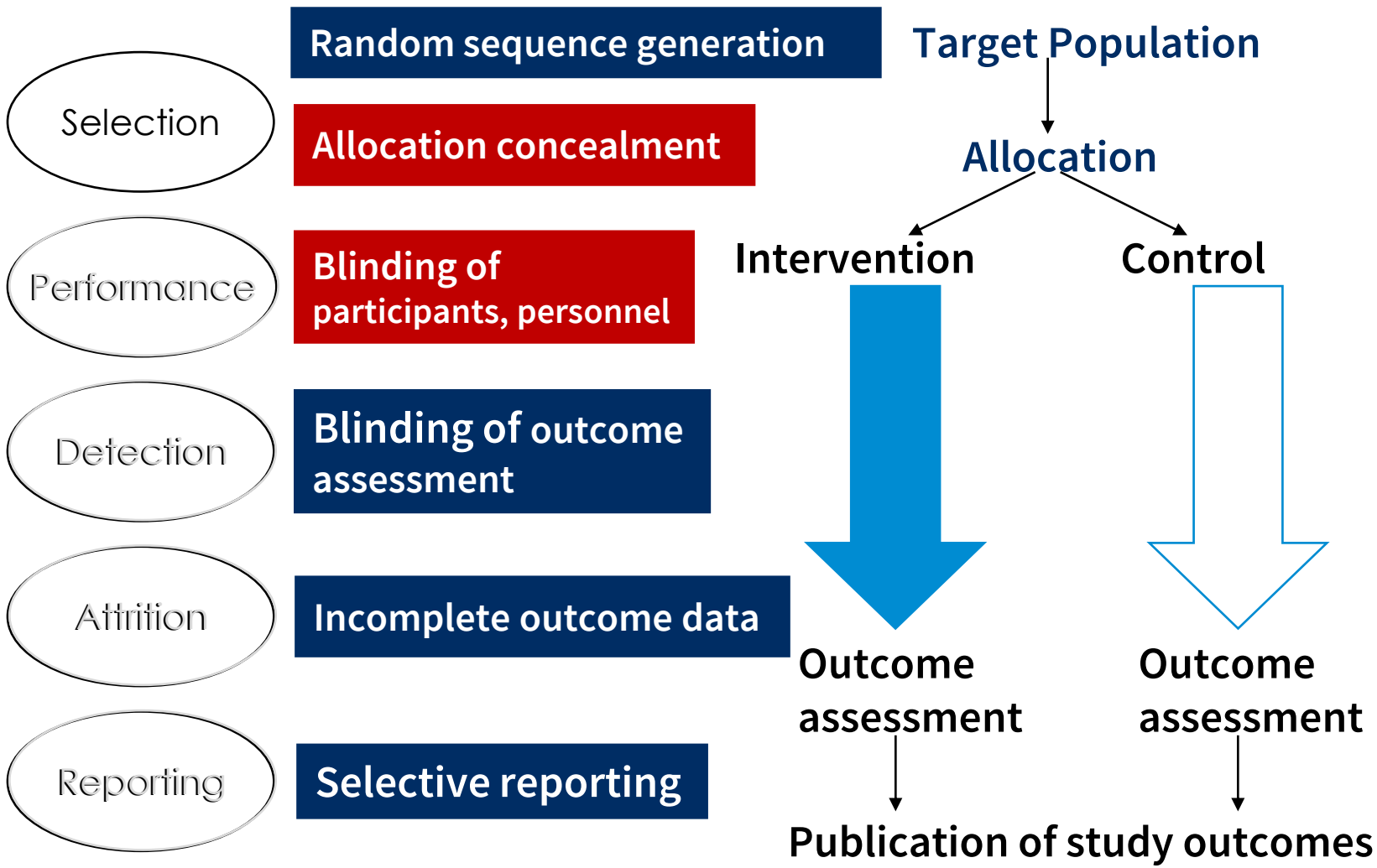

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Benchmarking Controlled Trials

An observational study aiming to provide non-biased estimates of differences in real-world circumstances due to:

- intervention(s)
- clinical pathways
- health care system(s)

among a well-defined group of patients.

ANN MED
Annals of Medicine, 2015; Early Online: 1–9

ISSN 0785-3890 print/ISSN 1365-2060 online
DOI: 10.3109/07853890.2015.1027255

informa
healthcare

ORIGINAL ARTICLE

Benchmarking Controlled Trial—a novel concept covering all observational effectiveness studies

Antti Malmivaara

Centre for Health and Social Economics, National Institute for Health and Welfare, Helsinki, Finland

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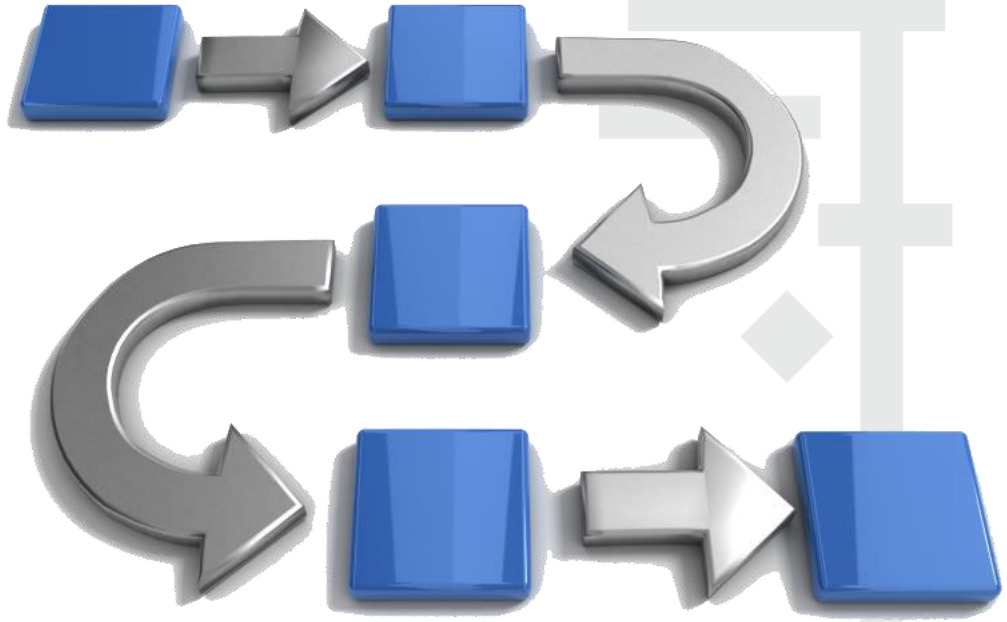
Rehabilitation process

Personal factors

- Team: multi-professional and interdisciplinary
- Therapists' competency and convincement
- Patients' convincement, compliance and adherence to treatment

Technical factors

- Low precision description (terminology and vocabulary)
- The Usual Therapy factor
- Multi-modal approach



Usual therapy (UT): the black box

Methods

- Systematic Review
- RCTs on rehabilitation for lower limb after stroke (2006-2016)

Results

- 79 papers (out of 1582)
- All treatments (13) checked only as «adjunctive» to UT
- 16 different treatments included in the UT groups
- Treatments in UT ranged from 1 treatment (19%) to 7 treatments (4%): mode 3 treatments (24%)
- No similar UT from different treating teams

Gobbo M, Arienti C, Negrini S. Usual therapy in gait rehabilitation for stroke. A systematic review of randomized controlled trials

Usual therapy (UT): the black hole

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Multimodal approach

Different treatments provided together

Same treatments combined differently by different teams

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Multimodal approach

Different treatments provided together

Treatments combined differently by different teams

Their combination gives the final result

Research problems in PRM

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PRM research methodological problems requires better understanding

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- All MeSH Categories
  - Analytical, Diagnostic and Therapeutic Techniques and Equipment Category
    - Therapeutics
      - Patient Care
        - Continuity of Patient Care
          - Aftercare
            - **Rehabilitation**
              - Activities of Daily Living
              - Animal Assisted Therapy
                - Equine-Assisted Therapy
              - Art Therapy
              - Bibliotherapy
              - Cardiac **Rehabilitation**
              - Correction of Hearing Impairment
                - Communication Methods, Total
                - Lipreading
                - Manual Communication +
              - Dance Therapy
              - Early Ambulation
              - Exercise Therapy
                - Motion Therapy, Continuous Passive
                - Muscle Stretching Exercises
                - Plyometric Exercise
                - Resistance Training
              - Music Therapy
              - Neurological **Rehabilitation**
                - Stroke **Rehabilitation**
              - Occupational Therapy
              - Recreation Therapy
              - **Rehabilitation** of Speech and Language Disorders
                - Language Therapy
                - Myofunctional Therapy
                - Speech Therapy
                - Speech, Alaryngeal +
                - Voice Training
              - **Rehabilitation**, Vocational
              - Telerehabilitation

Negrini S. Steady growth seen for research in physical and rehabilitation medicine: where our specialty is now and where we are going. Eur J Phys Rehabil Med. 2012 Dec;48(4):543-8.

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Steady growth of research

	Population	2000	2011	Change
PRM	PubMed	0.7%	1.5%	+114%
United States PRM	Country	1.7%	1.6%	+111%
United Kingdom PRM	Country	1.9%	1.7%	+113%
Germany PRM	Country	1.7%	1.1%	+150%
Canada PRM	Country	2.5%	1.9%	+128%
Australia PRM	Country	3.4%	1.8%	+195%
Italy PRM	Country	1.9%	0.9%	+207%
Netherlands PRM	Country	2.8%	1.8%	+155%
Japan PRM	Country	0.8%	0.6%	+138%
Sweden PRM	Country	3.4%	2.5%	+135%
France PRM	Country	1.2%	0.9%	+132%

All MeSH Categories
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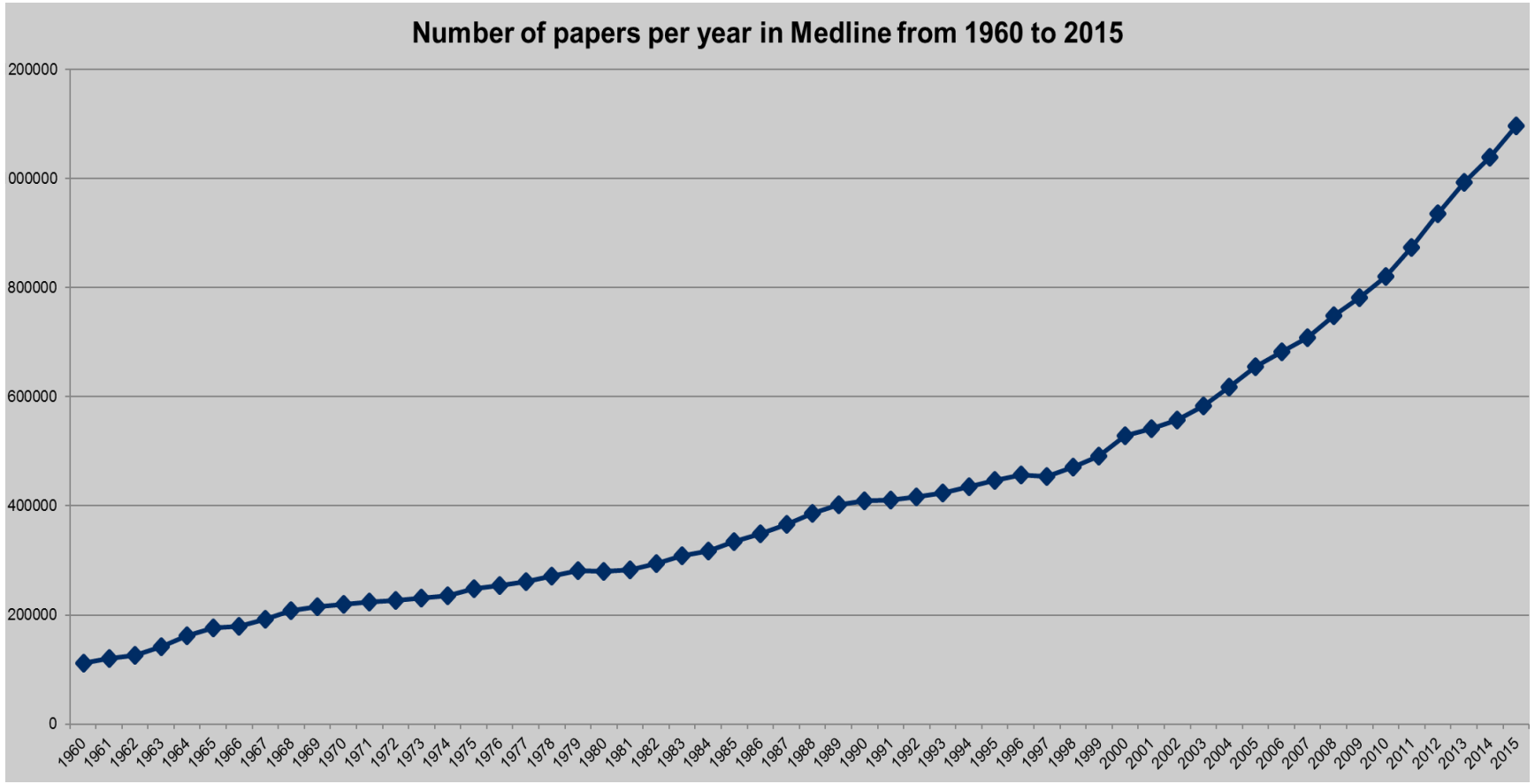
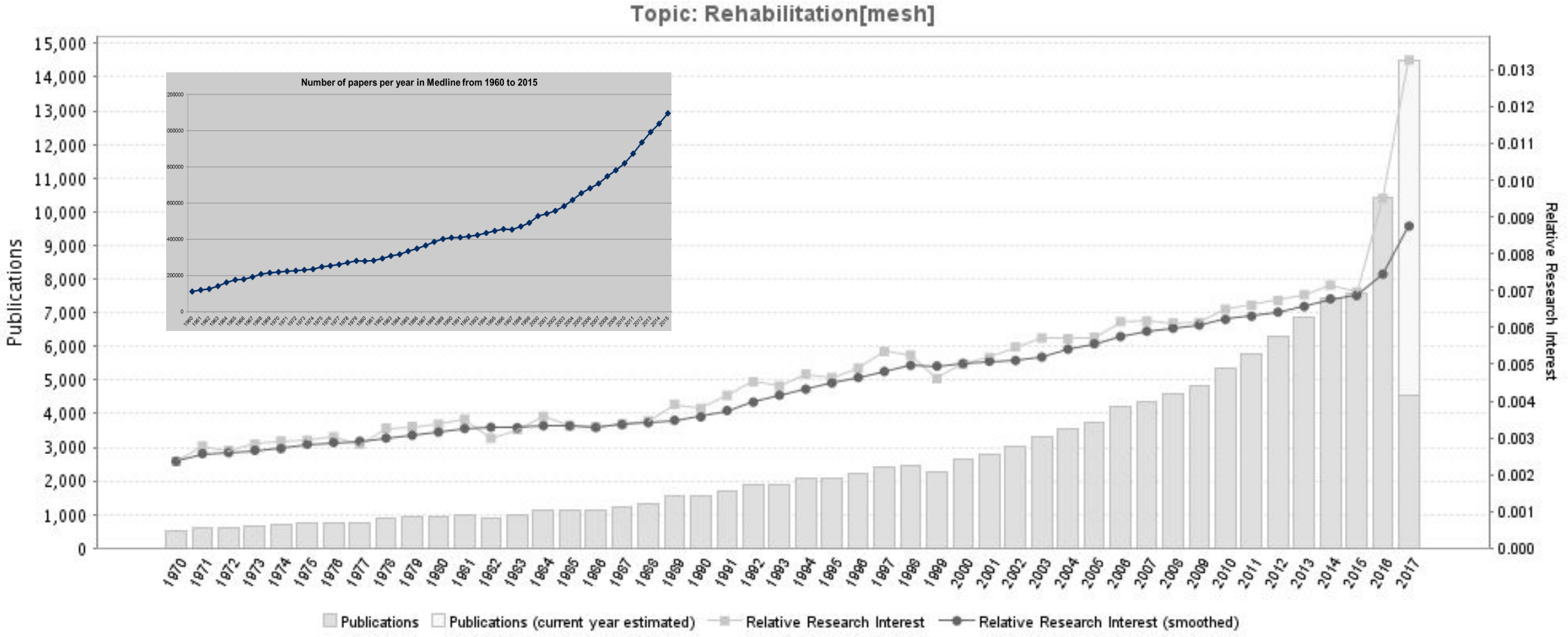
Growth of studies in PubMed



Research interest in Rehabilitation is growing

Search: Rehabilitation [Mesh]

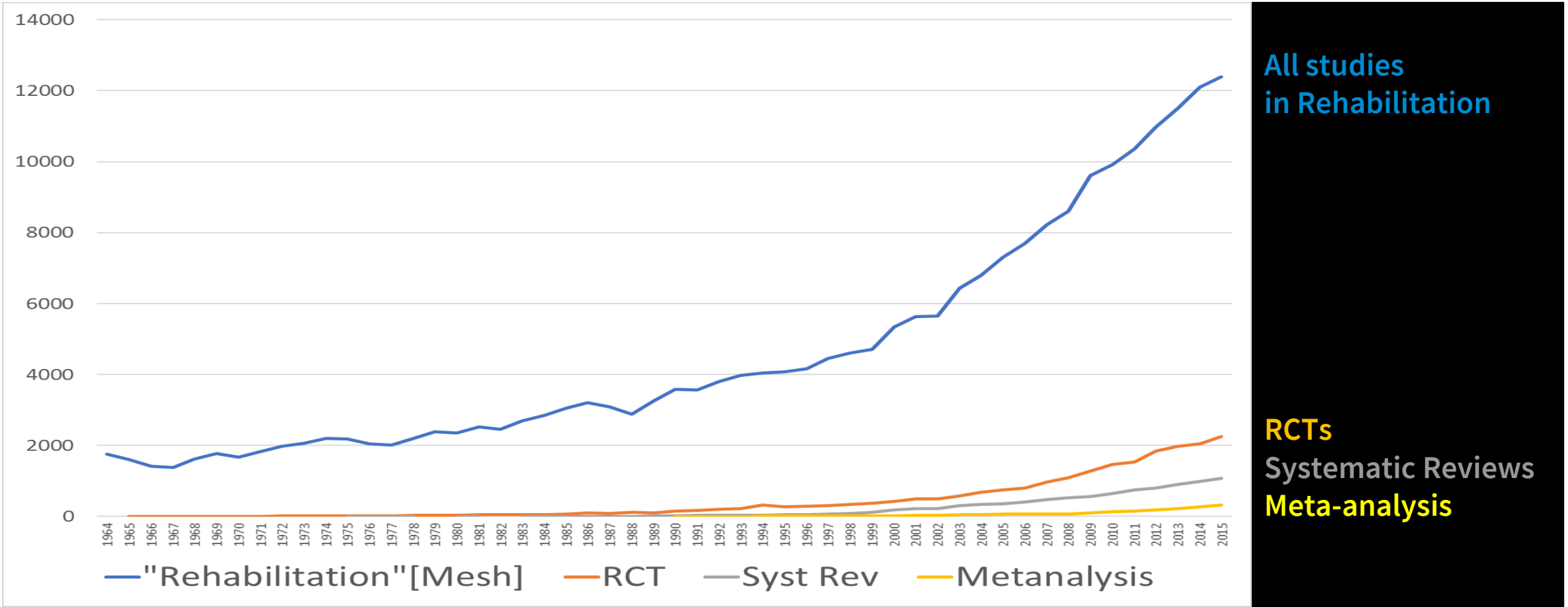
Source: www.gopubmed.org



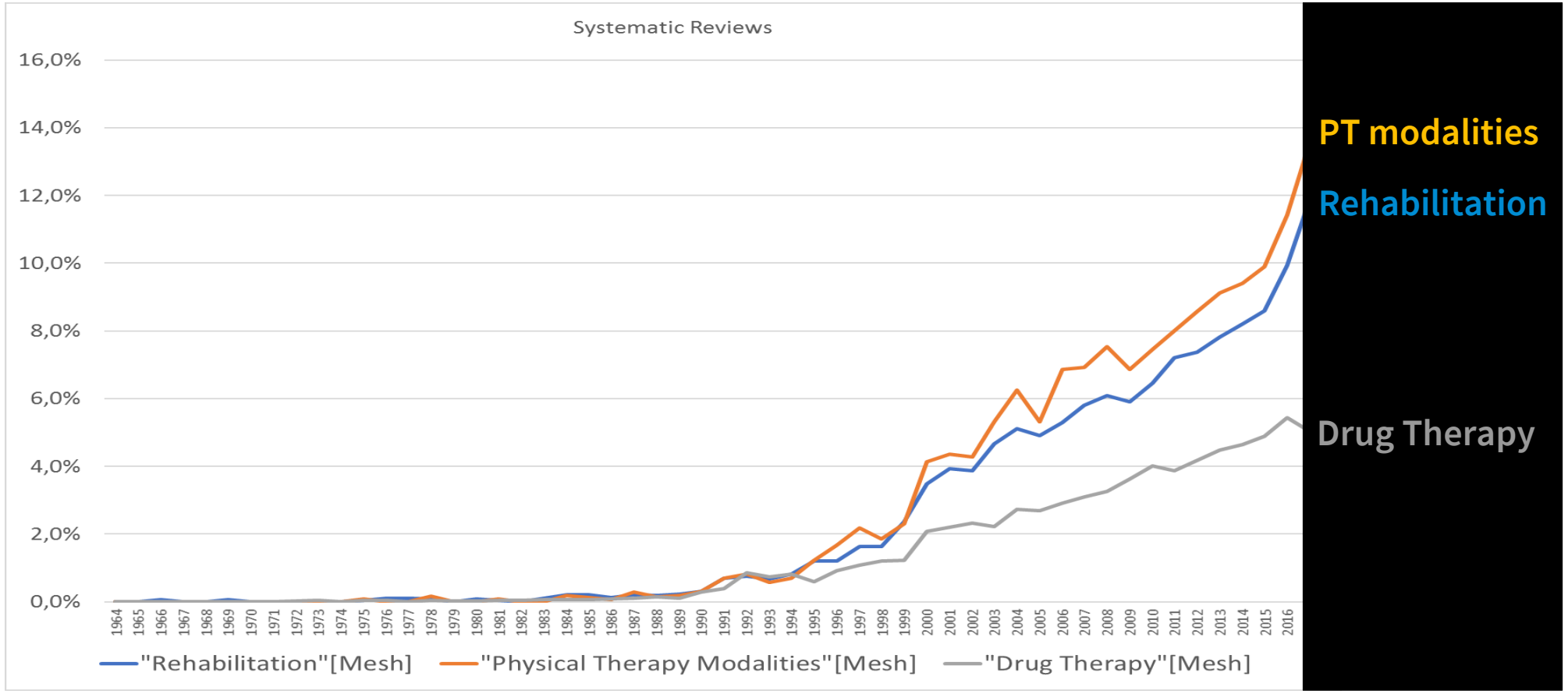
Growth of type of studies in Rehabilitation

Search: Rehabilitation [Mesh]

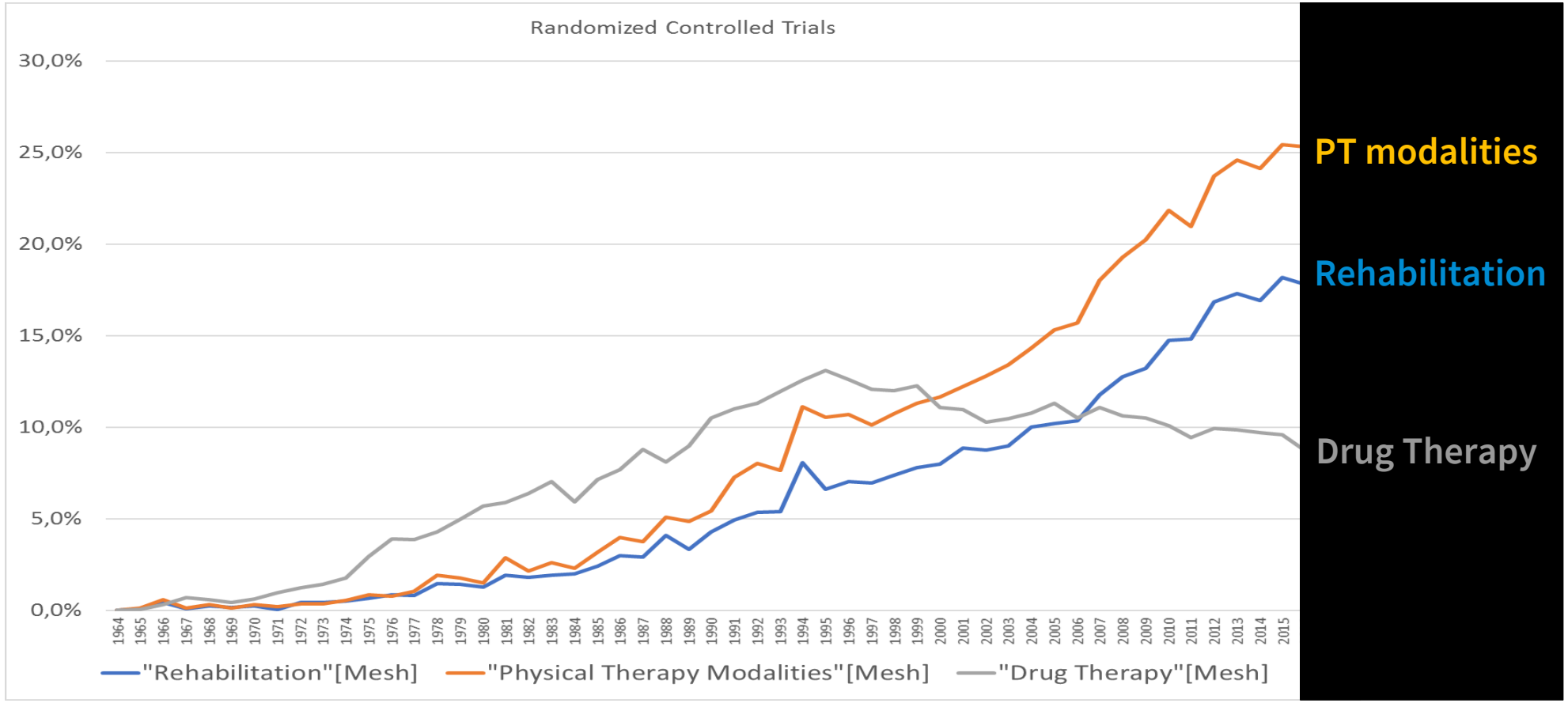
Filters: Randomized Controlled Trial, Systematic Reviews, Meta-Analysis



Relative research interest: SRs



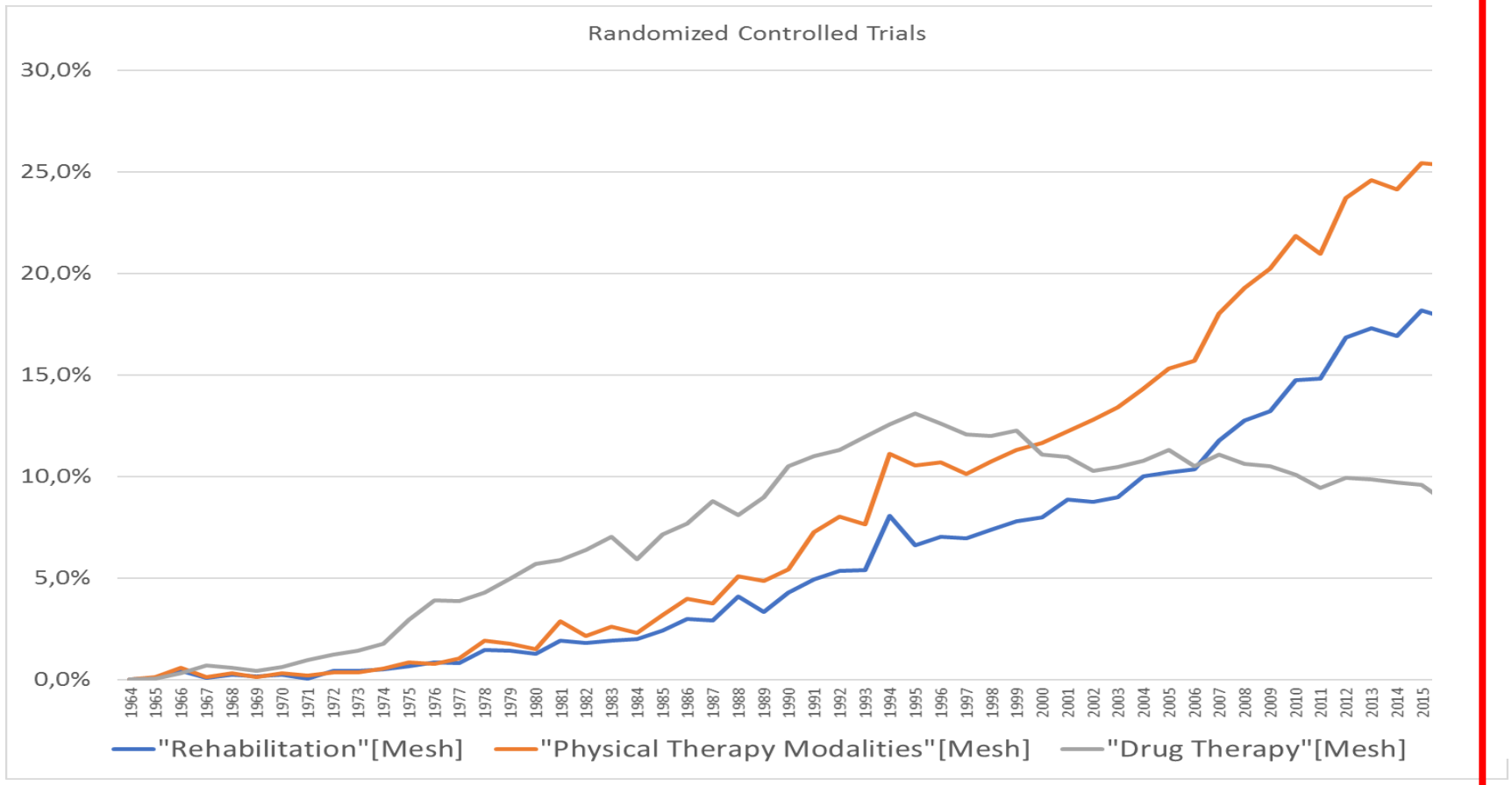
Relative research interest: RCTs



Cochrane Rehabilitation

All MeSH Categories
Analytical, Diagnostic and Therapeutic Techniques and Equipment Category
Therapeutics
Patient Care
Continuity of Patient Care
Aftercare

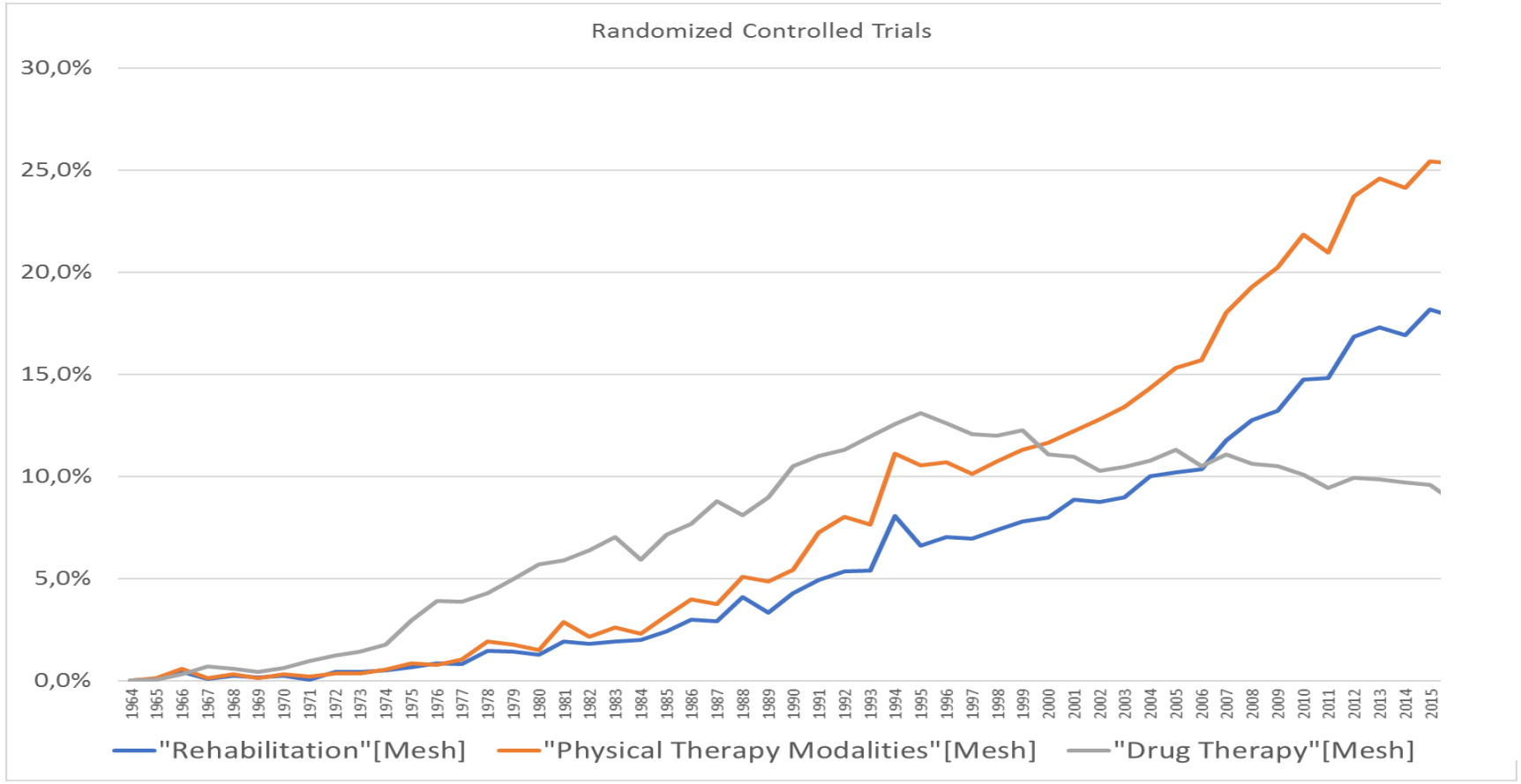
What is Rehabilitation [Mesh] ?



Rehabilitation
- Activities of Daily Living
- Animal Assisted Therapy
  - Equine-Assisted Therapy
- Art Therapy
- Bibliotherapy
- Cardiac **Rehabilitation**
- Correction of Hearing Impairment
  - Communication Methods, Total
  - Lipreading
  - Manual Communication +
- Dance Therapy
- Early Ambulation
- Exercise Therapy
  - Motion Therapy, Continuous Passive
  - Muscle Stretching Exercises
  - Plyometric Exercise
  - Resistance Training
- Music Therapy
- Neurological **Rehabilitation**
  - Stroke **Rehabilitation**
- Occupational Therapy
- Recreation Therapy
- **Rehabilitation** of Speech and Language Disorders
  - Language Therapy
  - Myofunctional Therapy
  - Speech Therapy
  - Speech, Alaryngeal +
  - Voice Training
- **Rehabilitation**, Vocational
- Telerehabilitation

Cochrane Rehabilitation

What is Rehabilitation [Mesh] ?



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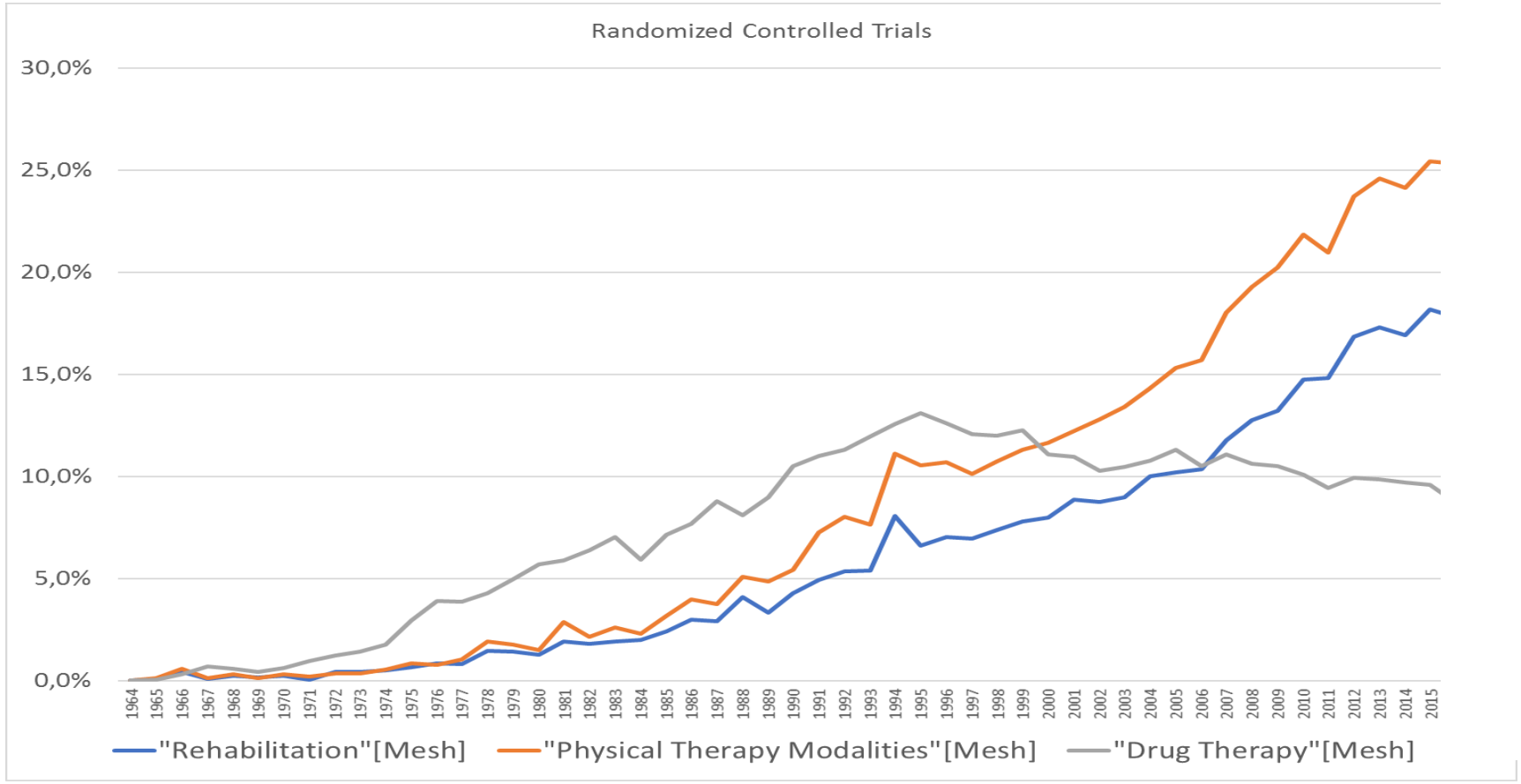
Cochrane Rehabilitation

What is Rehabilitation [Mesh] ?



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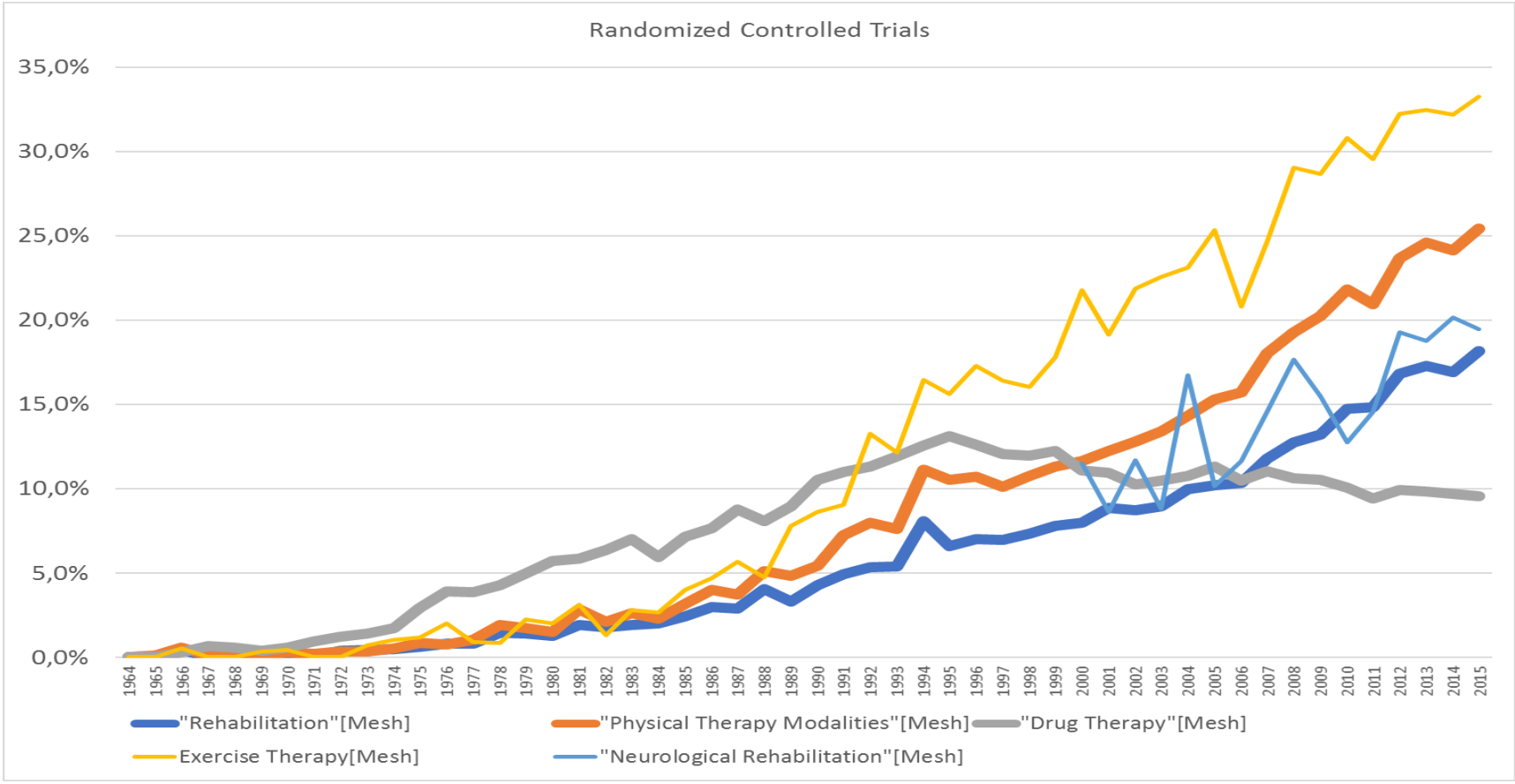
Cochrane Rehabilitation

Relative research interest: RCTs



Exercise Therapy

PT modalities

Neurological rehabilitation
Rehabilitation

Drug Therapy

PRM is comparatively producing a lot of good research (RCTs and SRs)

Overview

Evidence Based Medicine (EBM)

- The origin and reason for EBM
- Cochrane: the Gold Standard of EBM

Physical and Rehabilitation Medicine (PRM) and EBM

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- Problems with evidence generation in PRM
- State of research in PRM

Implementation of EBM in PRM

- Knowledge Translation
- Cochrane Rehabilitation

Some solutions for EBM in PRM

The Know-Do Gap

High quality evidence is not consistently applied in practice[1]

Examples in clinical practice:

- Statins decrease mortality and morbidity in post-stroke, but they are under-prescribed[2]
- Antibiotics are overprescribed in children with upper respiratory tract symptoms[3]

Examples in health system policies:

- Evidence was not frequently used by WHO[4] (not true for last rehabilitation guidelines)
- Out of 8 policymaking processes in Canada[5]
  - Only 1 was fully based on research
  - Other 3 were partially based on research

1. Majumdar SR et al. From knowledge to practice in chronic cardiovascular disease: a long and winding road. J Am Coll Cardiol. 2004; 43(10):1738-42
2. LaRosa JC et al. Effect of statins on the risk of coronary disease: a meta-analysis of randomized controlled trials. JAMA. 1999; 282(24): 2340-6
3. Arnold S et al. Interventions to improve antibiotic prescribing practices in ambulatory care. Cochrane Database Syst Rev. 2005: CD003539
4. Oxman A et al. Use of evidence in WHO recommendations. Lancet. 2007; 369(9576): 1883-9.
5. Lavis J et al. Examining the role of health services research in public policy making. Milbank Q. 2002; 80(1): 125-54

Why there is the Know-Do Gap ?

Evidence not focused on the end-users:[1]

- Epidemiologically and methodologically focused
- Missing details on interventions and settings

Lack of knowledge management skills and infrastructure[2]

- Macro-level: health care system and organization (finance and equipments)
- Meso-level: health care teams (standards of care)
- Micro-level: Individual health care professionals
  - Volume of, and access to research evidence
  - Time to read
  - Skills to appraise, understand and apply research evidence

1. Glenton C et al. Summaries of findings, descriptions of interventions, and information about adverse effects would make reviews more informative. J Clin Epidemiol 2006; 59: 770-8.
2. Grimshaw JM et al. Changhing physician's behavior: what works and thoughts on getting more things to work. J Contin Educ Health Prof. 2002, 22(4): 237-43

Cochrane Rehabilitation

Knowledge Translation

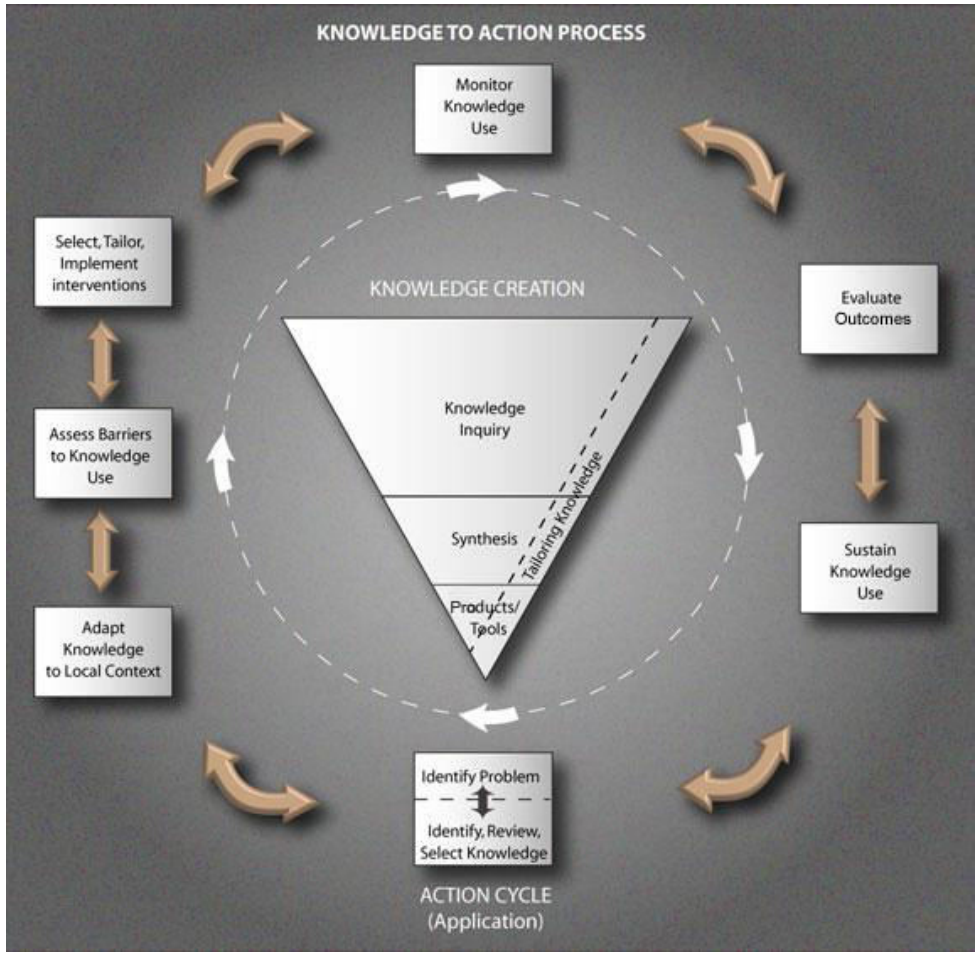
A dynamic and interactive process that includes the synthesis, dissemination, exchange, and ethically sound application of knowledge to improve health, provide more effective health services and products, and strengthen the health care system

Canadian Institute of Health Research[1]

Dissemination and implementation, implementation science, research use, knowledge transfer and uptake/exchange[2]

1. Mc Kibbon KA et al. A cross sectional study of the number and frequency of terms used to refer to knowledge translation in a body of health literature in 2006: a tower of Babel ? Impl Sci. 2010; 5:16.
2. www.cihr-irsc.gc.ca/e/29418.html.

Knowledge to action framework



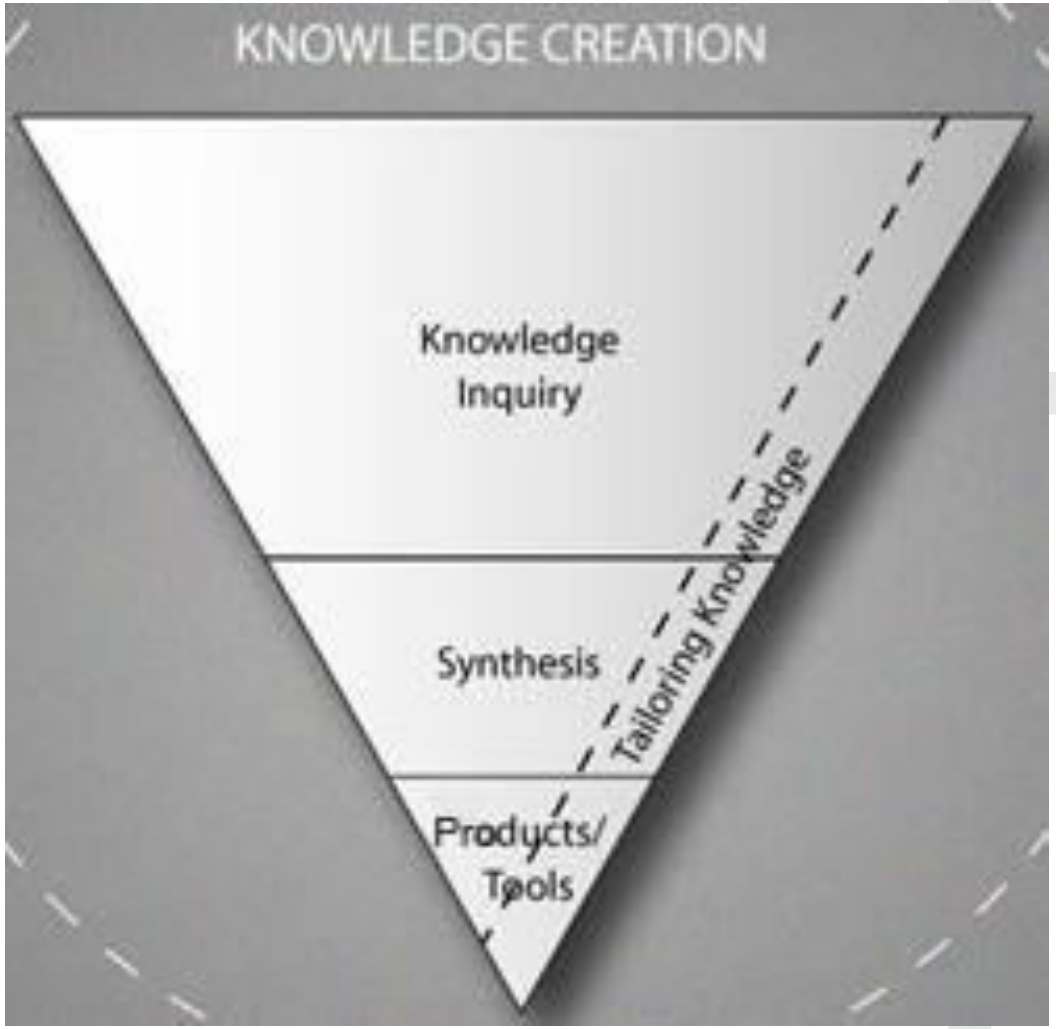
Graham ID et al. Lost in knowledge translation: time for a map ? J Contin Ed Health Prof. 2006; 26(11):13-24.

Knowledge creation

Knowledge inquiry
- Primary research studies

Knowledge synthesis
- Secondary research studies (systematic reviews)

Knowledge tools/products
- Guidelines
- Algorithms
- Messages for end-users



Graham ID et al. Lost in knowledge translation: time for a map ? J Contin Ed Health Prof. 2006; 26(11):13-24.

The Action Cycle (application)

Identify problem

Identify, review, select knowledge

Adapt knowledge to local context

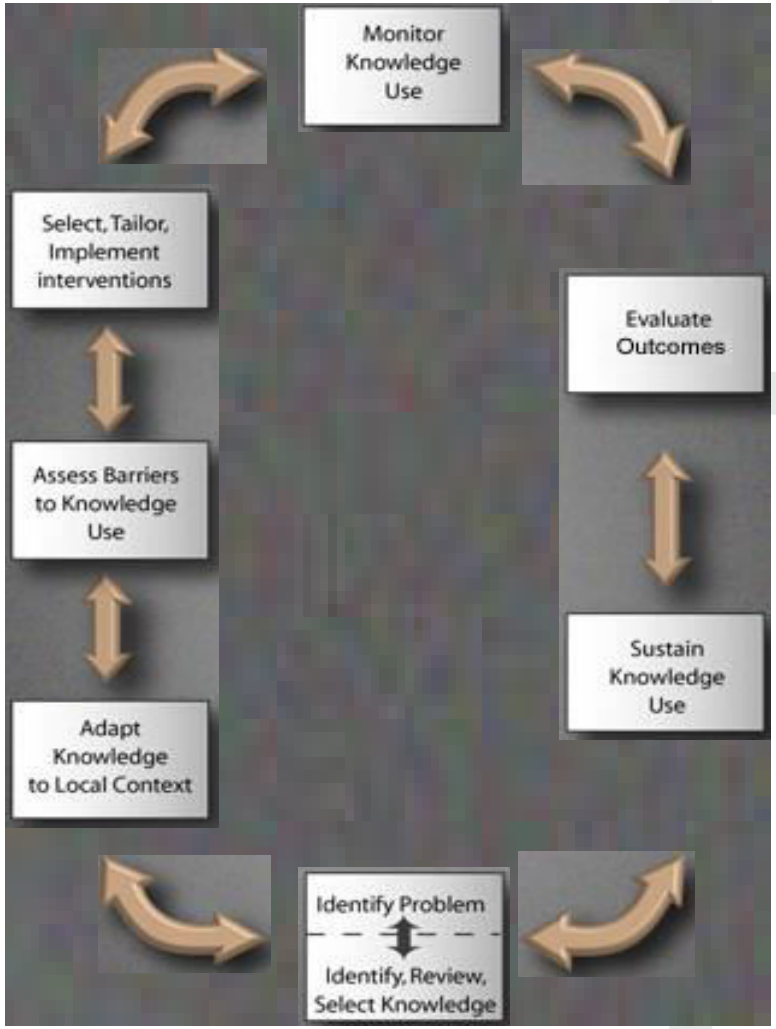
Access barriers – facilitation to knowledge use

Select, tailor, implement interventions

Monitor knowledge use

Evaluate outcomes

Sustain knowledge use



Graham ID et al. Lost in knowledge translation: time for a map ? J Contin Ed Health Prof. 2006; 26(11):13-24.

Implementation of evidence

Micro-level (individuals)

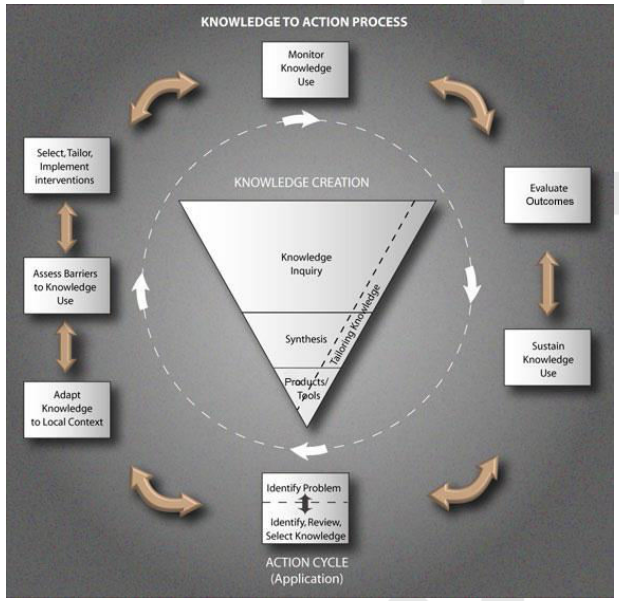
- Surrender to evidence
- Use facilitators (clinical charts)

Meso-level (organizations)

- EBM Continuous Quality Improvement groups
  - Human and financial resources
  - Specific thematic projects on a regular basis

Macro-level (Health Systems)

- National guidelines and flow-charts
- Data collection
- Rewarding system



Cochrane Rehabilitation

When Evidence is known, a Knowledge Translation effort is required

Overview

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Implementation of EBM in PRM

- Knowledge Translation
- Cochrane Rehabilitation

Some solutions for EBM in PRM

Cochrane Rehabilitation

56 Cochrane Review Groups

1. Acute Respiratory Infections Group
2. Airways Group
3. Anaesthesia, Critical and Emergency Care Group
4. Back and Neck Group
5. Bone, Joint and Muscle Trauma Group
6. Breast Cancer Group
7. Childhood Cancer Group
8. Cochrane Response
9. Colorectal Cancer Group
10. Common Mental Disorders Group
11. Consumers and Communication Group
12. Covidence Review Group
13. Cystic Fibrosis and Genetic Disorders Group
14. Dementia and Cognitive Improvement Group
15. Developmental, Psychosocial and Learning Problems Group
16. Drugs and Alcohol Group
17. Effective Practice and Organisation of Care Group
18. ENT Group
19. Epilepsy Group
20. Eyes and Vision Group
21. Fertility Regulation Group
22. Gynaecological, Neuro-oncology and Orphan Cancer Group
23. Gynaecology and Fertility Group
24. Haematological Malignancies Group
25. Heart Group
26. Hepato-Biliary Group
27. HIV/AIDS Group
28. Hypertension Group
29. IBD Group
30. Incontinence Group
31. Infectious Diseases Group
32. Injuries Group
33. Kidney and Transplant Group
34. Lung Cancer Group
35. Metabolic and Endocrine Disorders Group
36. Methodology Review Group
37. Movement Disorders Group
38. Multiple Sclerosis and Rare Diseases of the CNS Group
39. Musculoskeletal Group
40. Neonatal Group
41. Neuromuscular Group
42. Oral Health Group
43. Pain, Palliative and Supportive Care Group
44. Pregnancy and Childbirth Group
45. Public Health Group
46. Schizophrenia Group
47. Skin Group
48. STI Group
49. Stroke Group
50. Test CRG
51. Tobacco Addiction Group
52. Upper GI and Pancreatic Diseases Group
53. Urology Group
54. Vascular Group
55. Work Group
56. Wounds Group

4 with >20 reviews of PRM interest

1. Back and Neck
2. Bone, Joint and Muscle Trauma
3. Musculoskeletal
4. Stroke

Zaina F, Negrini S. EJPRM systematic continuous update on Cochrane reviews in rehabilitation: news from December 2011 to February 2012. Eur J Phys Rehabil Med. 2012 Mar;48(1):57-70.

Cochrane Rehabilitation

28 with ≥ 1 reviews of PRM interest

1. Acute Respiratory Infections
2. Airways
3. Back and Neck
4. Bone, Joint and Muscle Trauma
5. Breast Cancer
6. Cystic Fibrosis and Genetic Disorders
7. Dementia and Cognitive Improvement
8. Developmental, Psychosocial and Learning Problems
9. Ear Nose and Throat disorders
10. Eyes and Vision
11. Gynaecological, Neuro-oncology and Orphan Cancer
12. Gynaecology and Fertility
13. Heart
14. HIV/AIDS
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16. Injuries
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18. Lung Cancer
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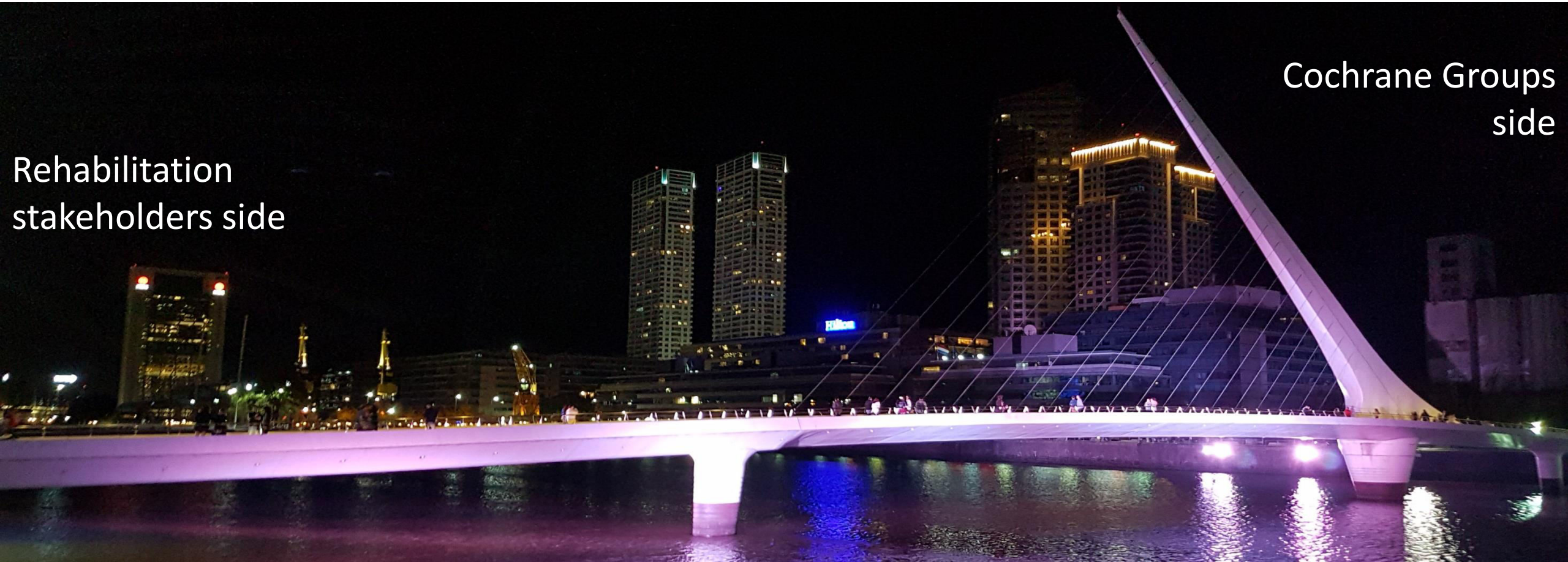
Cochrane Rehabilitation

Role of Cochrane Fields a bridge

-facilitate work of Cochrane Review Groups
-ensure that Cochrane reviews are both relevant and accessible to their fellow specialists and consumers



Vision

All rehabilitation professionals can apply Evidence Based Clinical Practice

Decision makers will be able to take decisions according to the best and most appropriate evidence

Mission

Allow all rehabilitation professionals to combine the best available evidence as gathered by high quality Cochrane systematic reviews, with their own clinical expertise and the values of patients

Improve the methods for evidence synthesis, to make them coherent with the needs of disabled people and daily clinical practice in rehabilitation.

Cochrane Rehabilitation

Goals

1. To connect stakeholders and individuals involved in production, dissemination, and implementation of evidence based clinical practice in rehabilitation, creating a global network
2. To undertake knowledge translation for Cochrane on reviews relevant to rehabilitation, with dissemination to stakeholders, in line with Cochrane's knowledge translation strategy
3. To develop a register of Cochrane and non-Cochrane systematic reviews relevant to rehabilitation

Cochrane Rehabilitation

Goals

4. To promote Evidence Based Clinical Practice and provide education and training on it and on systematic review methods to stakeholders
5. To review and strengthen methodology relevant to Evidence Based Clinical Practice to inform both rehabilitation and other Cochrane work related to rehabilitation and stimulating methodological developments in other Cochrane groups
6. To promote and advocate for Evidence Based Clinical Practice in rehabilitation to other Cochrane groups and wider rehabilitation stakeholders

Cochrane Rehabilitation

The Executive Commitee

1. Stefano Negrini, MD (Italy) – Director; Publication Com
2. Carlotte Kiekens, MD (Belgium) – Coordinator; Communication Com
3. Francesca Gimigliano, MD, PhD (Italy) – Communication Com
4. Frane Grubisic, MD (Croatia) – Publication Com
5. Tracey Howe, PT (United Kingdom)
6. Elena Ilieva, MD, PhD (Bulgaria) – Education Com
7. William Levack, PT, PhD (New Zealand) – Review Com
8. Antti Malmivaara (Finland) – Method Com
9. Thorsten Meyer, Psy, PhD (Germany) – Method Com
10. Julia Patrick Engkasan, MD (Malaysia) – Education Com
11. Farooq Rathore, MD (Pakistan) – Review Com; LMIC representative

Cochrane Rehabilitation

Committees

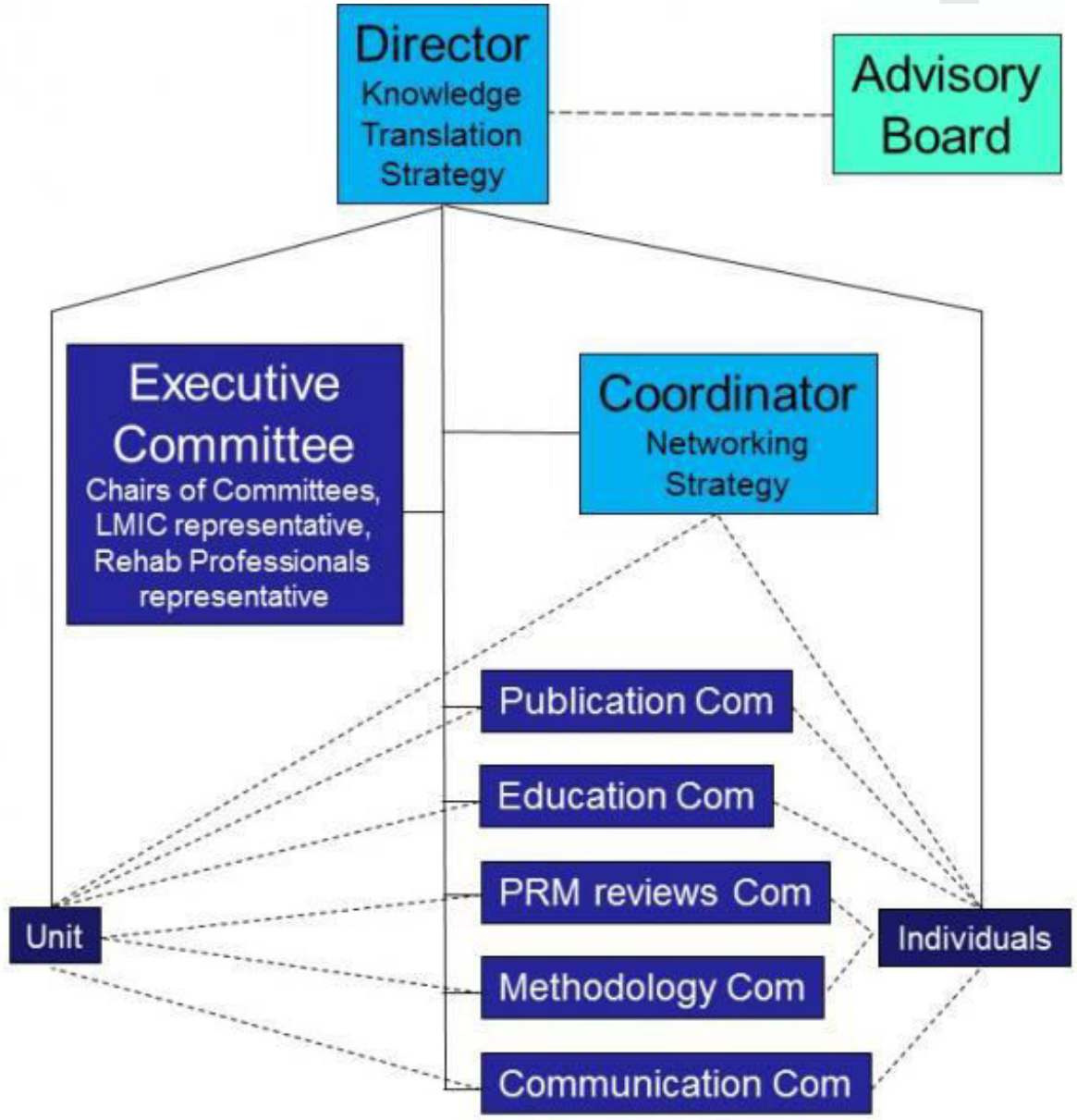
Methodology
- Stengthen methodology in Rehabilitation

Rehabilitation Reviews
- Reference database of Cochrane Reviews

Publication
- Cochrane Corners in scientific journals
- Cochrane Rehabilitation e-book

Communication
- Website, Newsletter, Social media

Education
- Courses, Workshops and Congresses



Cochrane Rehabilitation

Advisory Board

3 Cochrane Groups

5 World Scientific Societies

4 Regional Scientific Societies

12 Journals

4 Experts

4 Representatives

- ISPO
- ISPRM
- WCPT
- WFNR
- WFOT

Cochrane Rehabilitation

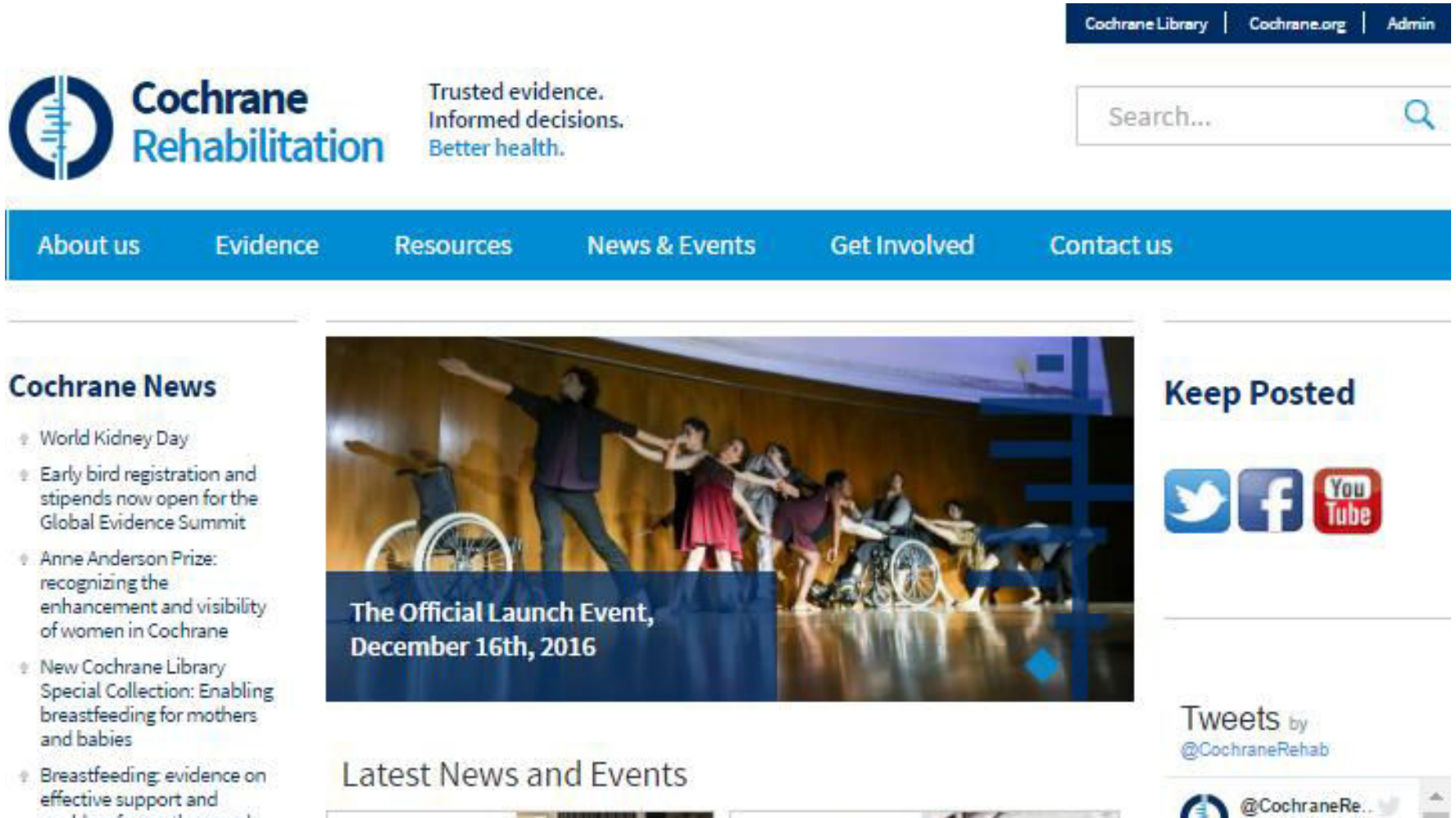
Individual members and Cochrane Rehab Units

Members: individual tasks

Units: big tasks and actions

Cochrane Rehabilitation

www.rehabilitation.cochrane.org Join us !



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- Cochrane Rehabilitation

Some solutions for EBM in PRM

What can we do to face these challenges?

There is a general «agreement» that PRM has low evidence

- We are struggling to produce sound (and meaningful) research
- In reality, we are not missing methodologically sound research (RCTs)
- But this good research does not relieve us: we still feel that we are missing evidence

Probably we are stuck by the RCT gold standard, that is not the best methodological approach due to the intrinsic limitation of PRM:

- Rehabilitation process
- Black box

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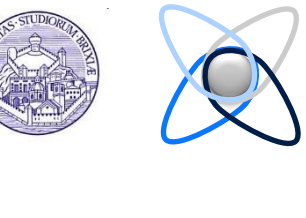
- Black box

It’s time to think out of the box !

Cochrane Rehabilitation


Hazardous journeys

Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials

Gordon C S Smith, Jill P Pell

BMJ VOLUME 327 20-27 DECEMBER 2003 bmj.com 1459

The Parachute Systematic Review of RCTs

Objectives. To determine whether parachutes are effective in preventing major trauma related to gravitational challenge.

Material and Methods. Design: Systematic review of RCTs. Data sources: Medline, Web of Science, Embase, and the Cochrane Library databases; appropriate internet sites and citation lists. Study selection: Studies showing the effe of using a parachute during free fall. Main outcome measure: Death or major trauma, defined as an injury severity score > 15.

Results. We were unable to identify any randomised controlled trials of parachute intervention.

Conclusions. As with many interventions intended to prevent ill health, the effectiveness c parachutes has not been subjected to rigorous evaluation by using randomised controlled trials.


Hazardous journeys

Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials

Gordon C S Smith, Jill P Pell

Abstract

Introduction

Methods

Discussion

Smith GCS. Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials. BMJ 2003; 327: 1459. doi: https://doi.org/10.1136/bmj.327.7429.1459.

Equipoise

The ethics of clinical research requires equipoise – a state of genuine uncertainty … regarding the comparative therapeutic merits of each arm in a trial…

- Individual level
- Expert medical community

Freedman B. Equipoise and the ethics of clinical research. The New England Journal of Medicine. 1987; 317(3):141–145

Cochrane Rehabilitation

What the consequences in PRM ?

Let's imagine gait rehabilitation for stroke

Is an RCT about making the patient walk like a parachute RCT?

Would an ethical committee consider unethical a control group without treatment ?

- Yes !
- Rehabilitation in this topic has evidence without RCTs

What are not parachutes (ethical committees would allow the studies)?

- Who makes him walk ?
- How he/she makes him walk ?
- How we increase the recovery speed ?
- How we reduce inherent costs ?

1. Parachute Evidence Based Ethical List in PRM

What is this ?

- A proposal to systematically list all PRM treatments that:
  - are like parachutes,
  - would be unethical to stop providing,
  - do not need any scientific study to prove their evidence

Methods

- Consensus procedures
- Partners
  - ISPRM
  - Cochrane
  - others ?

Limits

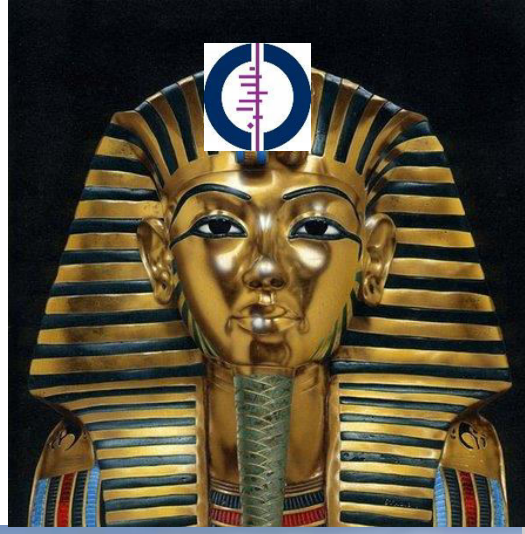
- Conflict of interest (?): but, who else if not us ?

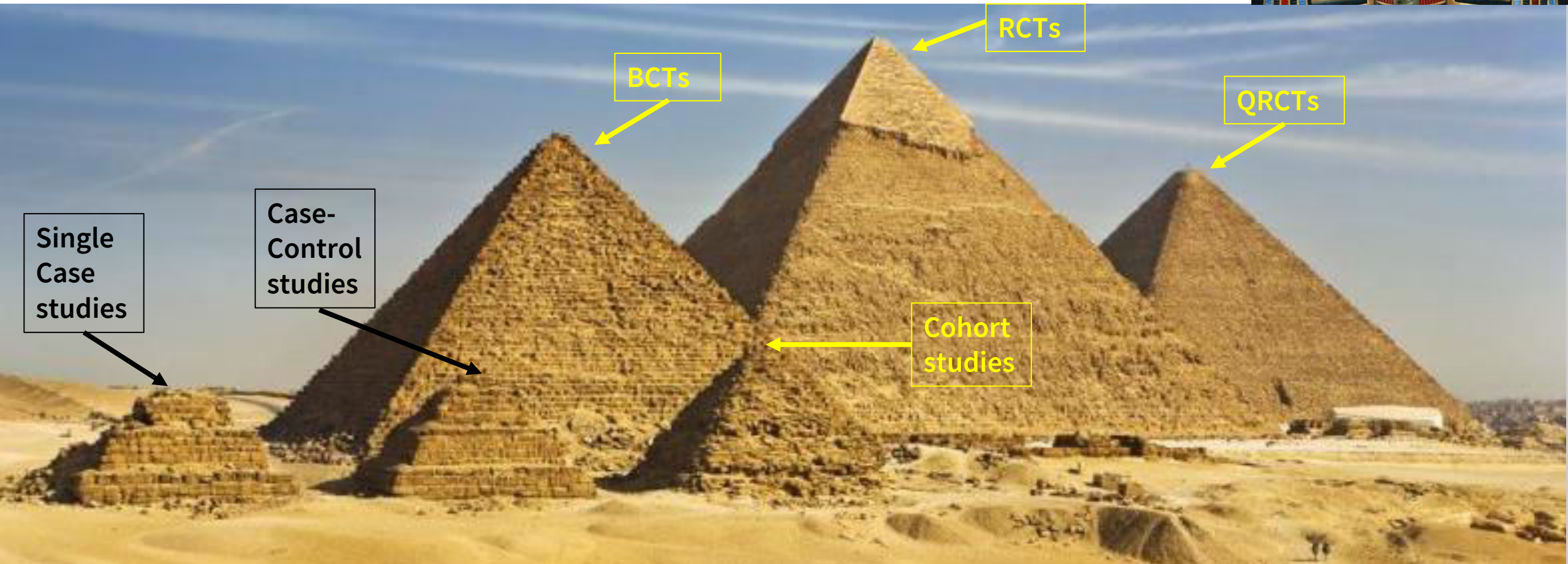
The Pyramid of Evidence

Cochrane Rehabilitation

2. The Pyramids of Evidence in PRM

Task of Cochrane Rehabilitation





Take home messages

Evidence Based Medicine (EBM)

- EBM is the last methodological achievement of medicine
- Cochrane and RCTs are the gold standard for a good EBM approach

Physical and Rehabilitation Medicine (PRM) and EBM

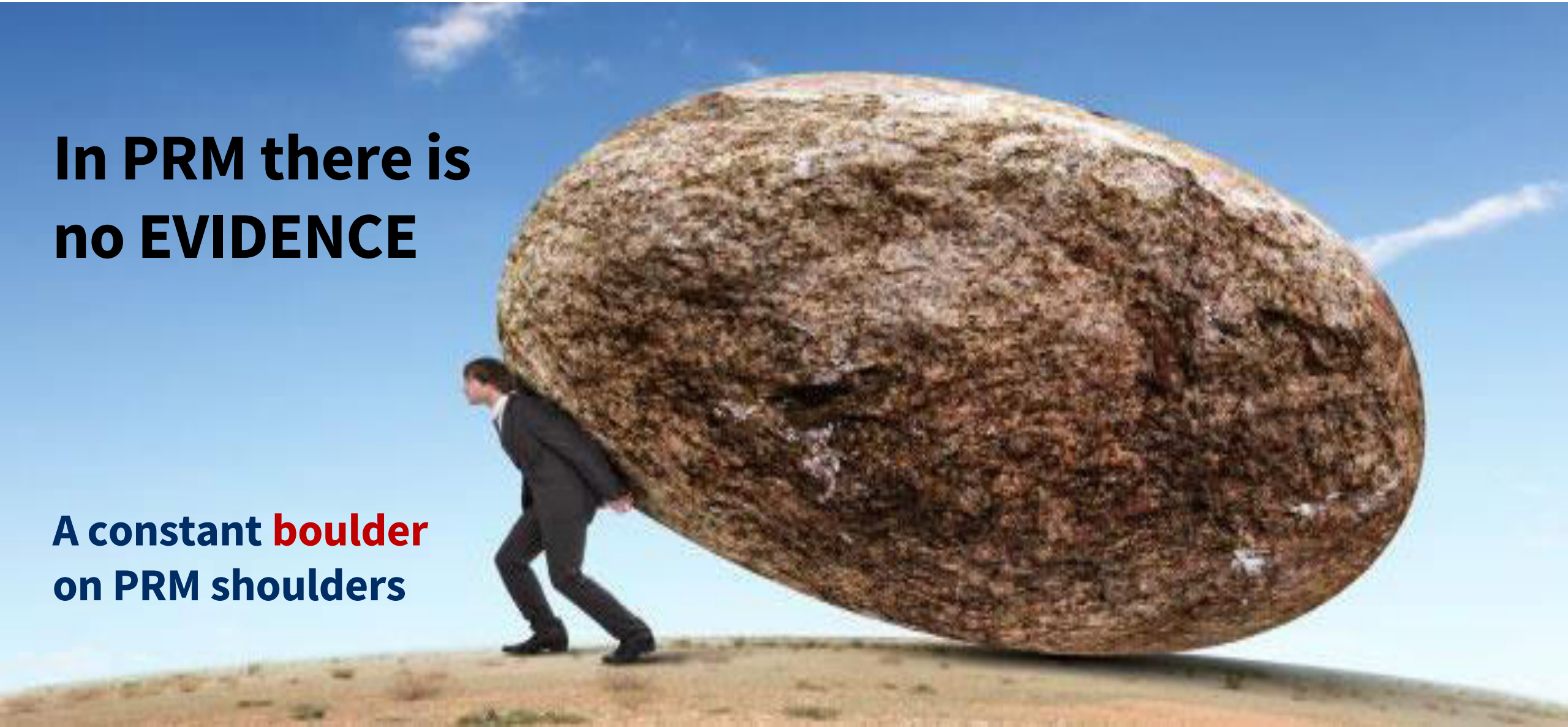
- PRM has specific challenges for EBM that must be faced
- PRM research methodological problems requires better understanding
- PRM is comparatively producing a lot of good research

Implementation of EBM in PRM

- When Evidence is known, a Knowledge Translation (KT) effort is required
- Cochrane Rehabilitation is the KT organization for PRM

PRM needs new out of the box thinking about the Evidence that we have, and how to generate future better Evidence

Cochrane Rehabilitation



In PRM there is no EVIDENCE

A constant boulder on PRM shoulders

Cochrane Rehabilitation

In PRM there is no EVIDENCE

Perhaps it is only a pebble in the shoe of PRM

Cochrane Rehabilitation

Thank you

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