



Evidence-based Policy

Workshop organized by the Académie des sciences
with the support of the French Cochrane Centre
Paris, 11 September 2015

Since the 1980s, the “evidence-based medicine” is used as a paradigm to evaluate new medical treatments. This methodology is used to validate the efficacy of new drugs, and it is taught to young doctors in the hope that this methodology will allow them to provide each patient with the best treatment. The Cochrane Collaboration, an independent international organization, which counts more than 16 000 volunteer experts across the world, carries out systematic reviews on the existing “evidence” and that is pathology by pathology, treatment by treatment, which are later proposed to decision makers and prescribing doctors. This approach is characterized by the thoroughness of literature review, the transparency of the approach and the fight against potential conflicts of interest.

Following its application in the medicine, the evidence-based approach is finding a wider use in other disciplines, where it is no longer possible to be satisfied with positions of principles or of opinions – be they those of “experts” – to build public decision-making. The evidence-based policy approach was already applied in many fields: in policy choices aimed at helping disadvantaged communities, in adoption of optimal agricultural practices, in criminology, in education... In this approach, like in medicine, the best evidences are sought, if possible thanks to randomised experiments, to identify the best component of an alternative. Similarly also, a great attention is paid to ethical constraints in order not to breach the confidentiality and the rights of a person.

The workshop, which is organized with the French Cochrane Centre, will consist of two sessions. The morning session will summarise the use of evidence-based policy in the medicine, and will demonstrate how the method eventually found an application in other fields, in particular, in the fight against social inequalities and in education. The afternoon session will consist of five case studies of evidence-based policy.

The workshop will be followed up by long distance exchanges, including electronic, in order to prepare a report that will be submitted to the approval of the French Academy of Sciences.

More information available from alain-jacques.valleron@academie-sciences.fr



Evidence based policy La décision publique fondée sur la recherche de preuves

A workshop organized by the Académie des sciences
with the support of the French Cochrane Centre

Fondation Simone et Cino Del Duca de l'Institut de France,
10, rue Alfred de Vigny, Paris 8^e

Vendredi 11 septembre 2015

9 :30 Opening

Jean-François Bach, Secrétaire perpétuel de l'Académie des sciences
Alain-jacques Valleron, Délégué à l'Information Scientifique, Académie des sciences
Philippe Ravaud, Directeur du Centre Cochrane France pour l'*evidence based medicine*

1st session : From « *evidence-based medicine* » to « *evidence-based policy* » Chairwoman: Anne Fagot-Largeault

9:45 *Lessons accrued from-evidence based medicine and Cochrane collaboration.*

Philippe Ravaud

Professor at University Paris Descartes, Paris
Director of the French Cochrane Centre

10:45 *The Campbell Collaboration, and the application of evidence-based practice in education.*

Paul Connolly

Head of the School of Education at Queen's University, Belfast, Northern Ireland, UK
Co-Chair of the Campbell Collaboration Education Coordinating Group

11:45 Coffee break

12:00 *Why randomized experiments to support « evidence-based policy » ?*

Esther Duflo

Professor of economy at Massachusetts Institute of Technology (MIT), USA
Founding member of the Abdul Latif Jameel Poverty Action Lab (J-PAL)



2nd session : Applications of evidence-based policy

Chairman: Christian Amatore

2:00 *Why randomized experiments must be used in justice and crime prevention.*

Lawrence Sherman

Wolfson Prof of Criminology, Director of the Cambridge Institute of Criminology, Cambridge University, Cambridge, UK

2:30 *The applications of evidence-based policy to evaluate social interventions.*

Nuala Livingstone

Researcher, School of sociology, Social policy and social work, Queen's University, Belfast

3:00 *Evidence-based policy and agriculture*

Catherine Laurent

Directrice de recherches, Sciences pour l'Action et le Développement., INRA, Paris.

3:30 Coffee Break

4:00 *Randomised experiments to test the effectiveness of parenting interventions for children's antisocial behaviour*

Frances Gardner

Professor of Child and Family Psychology, Department of Social Policy and Intervention, University of Oxford, UK

4:30 *How can equal education opportunity programs be assessed?*

Luc Behaghel

Directeur, Paris-Jourdan Sciences économiques (Laboratoire commun École des Ponts ParisTech - EHESS - ENS Ulm - INRA – CNRS UMR 8545), membre du Laboratoire J-PAL et de l'École d'économie de Paris

5:00 Conclusions

What next after the workshop?

Alain-Jacques Valleron, Académie des sciences et Philippe Ravaud, Centre Cochrane France

Closing remarks

Catherine Brechignac, secrétaire perpétuel de l'Académie des sciences

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Abstracts



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Lessons accrued from evidence-based medicine and Cochrane collaboration

Philippe Ravaud

Professor at University Paris Descartes

Director of the France Cochrane Center

and of the INSERM-Sorbonne Paris Cité Epidemiology and Statistics Research Center
(CRESS-UMR1153)

Evidence-Based Medicine, defined as “the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients” has made a clear and permanent mark on the face of medicine. Over the last 25 years, making decisions in health care based on evidence is becoming standard practice for physicians and policy makers. Assessing interventions through randomized controlled trials (RCTs) and systematic reviews and meta-analyses of RCTs is now the norm for pharmacological interventions but also for complex interventions such as surgery, behavioral therapy, rehabilitation or technical procedures. This talk will review the methods used and their limitations. A particular focus will be put on reporting bias that is the greatest threat to the validity of syntheses of evidence. An overview of the strategies developed over time to prevent reporting bias (development of reporting guidelines, trial registries, US and EU laws requiring reporting of results). The role of the Cochrane collaboration in the development of systematic reviews and meta-analyses will also be outlined.



The Campbell Collaboration and the Application of Evidence-Based Practice in Education

Paul Connolly

Head of School of Education, Queen's University Belfast
Co-Chair of the Campbell Collaboration Education Coordinating Group

The use of evidence-based practice in education has attracted much debate and controversy over the last decade. For some, the use of randomised controlled trials (RCTs) to provide evidence of the effectiveness of differing approaches to teaching is simply not appropriate. It is argued that teaching is highly complex, context-specific and much more of a 'craft' than a hard science. As such, not only is it felt that RCTs are striving to identify universal laws of teaching that do not exist but that, crucially, RCTs ignore the various contexts and processes within which teaching occurs. However, there has been a significant shift towards the use of RCTs in education over the last decade or so in the US, UK and elsewhere. An ongoing review led by the present author has found nearly 900 RCTs published in education since 1980. With this in mind, the Campbell Collaboration has an important role to play in helping to systematically review and synthesise this growing body of evidence, in a way that is sensitive to the types of concerns raised as outlined above. This presentation provides an overview of the work of the Campbell Collaboration, some of the key criticisms made within education regarding the use of RCTs and identifies some of the key challenges for the Campbell Collaboration in continuing to draw together and synthesise the available evidence from RCTs and other types of evaluation in a way that is appropriate and meaningful for teachers, educators and policy makers.



Why randomized experiments to support « evidence-based policy » ?

Esther Duflo

Professeur d'économie au Massachusetts Institute of Technology (MIT)
Membre fondateur du Laboratoire d'action contre la pauvreté, Abdul Latif Jameel (J-PAL)

This talk will review the rationale for using randomized evaluations in creating an evidence base for development policy. There is little consensus on the best use of scarce development money, partly due to the lack of evidence of what has worked and what has not worked. In turn, the lack of evidence from the difficulty in obtaining estimates of the causal impacts of policies and programs with only observational data: selective placement of locations and participants make it generally nearly impossible to obtain a credible counterfactual for what would have happened in the absence of the program. Randomized Control Trials solve this problem, by creating strictly comparable treatment and comparison groups. There are different types of RCT in the policy space: "what works" evaluation (evaluation of existing interventions); "mechanism experiments" (more specific tests of a particular theory) and "at scale" experiment, often conducted with a government, to test the impact of a policy when implemented on a large scale and in normal conditions. I will give example of all three. In the development field, RCT-generated evidence is starting to play a role in policy debates and decisions, and more generally, have helped turned the tide among donors and governments, with an increasing reliance on rigorous data when making funding decisions.



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Why randomized experiments must be used in justice and crime prevention

Pourquoi les expériences randomisées doivent être utilisées en justice et pour la prévention de la criminalité.

Lawrence W. Sherman

Wolfson Professor of Criminology, Director of the Cambridge Institute of Criminology, Cambridge University, UK

In over 80 years of randomized experiments on crime, surprises and discoveries have repeatedly shown the failure of theories without evidence. They have also demonstrated the superiority of new approaches that have helped to reduce crime. RCTs have, for example, found higher death rates caused by well-intentioned programs for juvenile delinquency and domestic violence. But they have also found strong crime reduction effects for hot spots policing and restorative justice. The complexity of criminal behaviour and of government programs requires a “Triple-T” of systematic evidence in **Targeting** different kinds of crime and criminals for randomized **Testing** of specific programs based on **Tracking** service delivery with independent measures to insure test validity.



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The applications of evidence-based policy to evaluate social interventions.

Nuala Livingstone

Research Fellow
School of Sociology, Social Policy and Social Work
Queen's University Belfast

Evidence based policy has origins in evidence based medicine, and has demonstrated repeatedly its value in the evaluation of medical interventions. Evidence Based Practice regards systematic reviews of RCTs as being the top of the hierarchy of evidence. A logical next step has therefore been to move research forward to also review social interventions in a similar, systematic method. Systematic reviews of social interventions present various challenges. Using the example of a recently completed evidence synthesis assessing the effectiveness, acceptability and cost effectiveness of psychosocial interventions for maltreated children and adolescents, this presentation will discuss that various challenges that are commonly faced in a systematic review of social interventions, as well as the various opportunities that each challenge presents, thus demonstrating both the complexity and significant worth of a using evidence based policy to evaluate social interventions.



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What works for whom and how? Randomised experiments to test the effects of parenting interventions for children's antisocial behaviour

Frances Gardner, DPhil

Professor of Child and Family Psychology,
Co-Director, Centre for Evidence-Based Intervention
Fellow of Wolfson College
Department of Social Policy and Intervention
University of Oxford

This talk will focus on testing the effectiveness of parenting interventions for improving parenting skills and for reducing child conduct problems, especially in early and middle childhood, based on randomised trials and systematic reviews. As well as examining evidence about the main effects of parenting interventions on children's behaviour, it will also ask key questions about which kinds of children and families these interventions work for (moderator effects), through what mechanisms (mediator effects), and in what service contexts. In particular, policy makers are concerned about the extent to which parenting interventions are applicable and effective with disadvantaged and marginalised populations, and whether they can be transported across countries and diverse cultural groups, and still retain their effectiveness. The talk will draw on Professor Gardner's experience of conducting randomised trials and systematic reviews of parenting interventions for reducing child conduct problems, and for reducing harsh parenting and violence towards children in UK, USA, and in Africa, on her policy work with groups such as WHO Violence Prevention, UNICEF and UNODC, as well as literature from many countries.



“Evidence based policy » and agriculture

Catherine Laurent
Directrice de recherches
Sciences Pour l'Action et le Développement., Inra, Paris.

The approaches in terms of "evidence-based decision" (EBD) have generated important conceptual and methodological advances. The case of agriculture provides good illustrations of the variety of uses of the EBD tool box to address simple and well-defined issues: systematic reviews, methods to assess the quality of evidence, to implement evaluations, devices to socialize existing knowledge.

The situation is quite different when it comes to design more comprehensive policies.

The complexity of the problems faced by public policies, the cost of EBD tools and the temporality of their results limit the scope of these instruments. However, as discussed through examples, these tools can usefully contribute to informing public debate and the decision, in order to allow the development of "evidence-informed policies".

But some approaches call for a much more exclusive use of evidence-based policy tools. They aim in particular to base the standards of public action on evidence obtained by systematized procedures and cost-benefit analyzes. As observed with regulatory science, these approaches may deprive citizens from part of their political prerogatives to replace them with decision rules that do not comply with basic principles of democracy.

Thus, we have to find our way to make the most the evidence-based decision tool-box to inform policies and avoid the risks of hegemonic conceptions of evidence-based policies.



How can equal education opportunity programs be assessed?

Luc Behaghel

Director, Paris-Jourdan Sciences économiques (UMR 8545),
Member du Laboratoire J-PAL et de l'École d'économie de Paris

In order to fight the intergenerational transmission of educational inequalities, policy makers may combine different approaches: parenting interventions to make poorer families more effective, mobility programs that provide children with a more favorable environment (better neighborhoods and/or classmates), or extra resources at school for those who lack them at home. Equality of opportunity boarding schools constitute an interesting case study, with less time at home and more school inputs. We analyze the impact of this substitution in the context of one French "Internat d'Excellence", taking advantage of admission lotteries. We show that the boarding school increases test scores in mathematics, but only after two years. The absence of effect after one year is surprising as the school provides better inputs to boarders from their first year. Also, positive effects after two years mostly come from strongest students at baseline. Non-cognitive measures show the emotional costs of adjusting to the boarding school, that only parts of the students overcome after some time. Substituting school to home is disruptive at first, only benefits the strongest students after two years, but for them benefits are really large. These are important tradeoffs to bear in mind when comparing boarding schools to alternative education opportunity programs.