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CONFERENCE REVIEW

Evidence on trial: has it made an impact on health?

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This conference was hosted by the New Zealand Branch of the Australasian Cochrane Centre in Auckland, New Zealand in association with the New Zealand Guidelines Group. The conference was timed to coincide with the Cochrane Collaboration's mid-year meeting.

Of interest to foreign delegates was the Powhiri, the traditional Maori welcoming ceremonial protocol. Unlike the often awkward and sometimes perfunctory acknowledgment of the traditional owners that is seen in Australia, the New Zealanders present, both Maori and those of European descent, all seemed to be genuinely committed to the half hour ceremony and participated with appropriate solemnity.

The conference proceedings then commenced with a welcome from Cindy Farquhar, Professor of Obstetrics and Gynaecology at the University of Auckland, Coordinating editor of the Cochrane Menstrual Disorders and Subfertility Group and Director of the New Zealand Branch of the Australasian Cochrane Centre.

Professor Sally Green, Director of the Australasian Cochrane Centre gave a polished presentation on introduction to evidence and the structure, function and role of the Cochrane Collaboration. She spoke briefly about the gap between best evidence and clinical practice (the so called "know-do" gap) and spoke briefly of her conceptual model of Knowledge Transfer and Exchange she calls the "Rainbow model" which identifies seven aspects for effective Knowledge Transfer and Exchange:

1. Identifying important questions;
2. Generate and synthesise knowledge instead of creating a deluge of single studies;
3. Improving access to this knowledge;
4. Identify and refine the problems, understanding policy and practice context;
5. Develop interventions underpinned by theory to change policy, practice and evaluation;
6. Apply strategies to sustain policy and practice change (evaluation being as important as the research);
7. Build the infrastructure of KTE, and creating an accepted culture of evidence use.
8. For novices to the world of KT, this first session provided a brief but useful framework for understanding KT and its related problems.

Green was followed by Dr Mark Jeffrey, Co-director of the New Zealand Branch of the Australasian Cochrane Centre. He provided a lively account of New Zealand's contribution to and involvement in the Cochrane Collaboration, although I am not sure that his 'number of systematic reviews per head of population' would withstand too much biostatistical scrutiny!

Professor Alessandro Liberati, is Professor of medical Statistics in the Medical School at the University of Modena, Italy and is Director of the Italian Cochrane Centre. Liberati spoke on the topic of globalising evidence. As is usual at Cochrane conferences, he stated the need for good evidence so that clinical decisions are based on best evidence and that patients ought to benefit as a result. He discussed the application of global evidence and the application of such evidence through local decision making as well as the pros and cons that this brings. Perhaps of particular interest to readers of this journal was his discussion on the evolution of the 'guidelines movement' using examples of guidelines that have encountered challenges when transferred across cultures. His salient point being that even when the evidence is clear, local circumstances affect how it is used and taken up. This led him to raise the question of whether global guidelines are feasible and/or desirable. Liberati contends that global guidelines may help locally if they are valid and if the processes for local adaption and adoption are transparent at every stage of development.

Chris Del Mar spoke next and gave a particularly interesting presentation. Professor Del Mar is the Pro-Vice Chancellor (Research) at Bond University, Australia and a Co-ordinating Editor of the Cochrane Collaboration. He spoke on 'Responding to world information needs rapidly'. He spoke of his involvement with the Cochrane systematic reviews of the use of antiviral medications in response to pandemic influenza, and in particular the extraordinary and bruising experience encountering the displeasure of Roche pharmaceuticals after reviewing the effectiveness of Tamiflu®.

Has evidence made a difference in developing countries? This was the question asked by Prathap Tharyan, Professor of Psychiatry at Christian Medical College, Vellore, Tamil Nadu, India. His answer was: It depends – on who you ask, how you define it, and who cares. Like Liberati, he contends that local settings can affect the uptake, as in many settings interventions are simply unavailable or unaffordable. Although India has government funded national access to the Cochrane library, access is often difficult at the best of times and during disasters like the Asian tsunami, Internet access is impossible. He reinforced that access to the Cochrane library on CD is essential in developing countries.

Tharayan also spoke of what he foresees as a revolution in the future of medical practice in India where some medical students are now encouraged to question their lecturers rather than simply accepting their assertions as fact. He describes this as a new way of thinking that he hopes will spread across all local health professions.

Rebecca Armstrong is the editorial and methods advisor for the Cochrane Public Health Group. Her presentation on "*Evidence beyond RCTs*" was of particular pertinence to readers of this journal, as naturally much of the work of practitioners in emergency primary health care does not lend itself to the conduct of a feasible or ethical RCT.

Armstrong contends that the evidence debate needs to be shifted to explicitly include areas like prevalence data, economic modelling, community views and even professional experience, rather than simply rejecting these sources of data a priori as being of little or no value. She proposes that rather than being guided by methodological strictures (my words), we instead should ask questions that are important like: Where is the evidence about what works? For whom does it work? Why does it work? In what circumstances does it work? At

what cost? Does it matter? Is it worth it? Once these questions are explicitly framed, then an appropriate research model should be applied – and this will often mean using results from study times other than RCTs. She described the methodological difficulties of this approach, particularly the problem of an increased risk of bias, which could be counteracted by better descriptions of the study design and setting.

Lisa Bero is Professor in the Department of Clinical Pharmacy at the University of California, San Francisco and the Co-director of the San Francisco Branch of the Cochrane Centre. Bero gave a typically engaging and energetic presentation on the question of ‘*Evidence: can we trust it?*’ Her immediate answer being “Of course not”! She spoke in detail about the effect that funding sources systematically have on reports of effectiveness in drug trials. She then raised, but was unable to answer the question of what should be done about it: the options ranged from requiring better disclosure to restrictions on direct funding to an outright ban on pharmaceutical companies conducting evaluations altogether on their own products.

Liz Whamond is chair of the Cochrane Consumer network and also sits as a consumer representative on the Cochrane steering group. Perhaps following a stream of pithy presentations was a hindrance, but this presentation was less satisfying than other presentations as it lacked a clear structure and the essential message was hard to discern.

The same cannot however be said for the next presenter Dr Peter Gøtzsche. Gøtzsche is the director of the Nordic Cochrane Centre and lecturer in medical science theory and ethics at Rigshospitalet, Denmark. Gøtzsche described the problem as having four aspects:

1. Money;
2. Money;
3. Even more money;
4. Prestige, vanity, beliefs, friends emotions, voters and competition (amongst others).

Gøtzsche used phrases like “*criminal*”, “*mafia*”, and “*corrupt*” when describing the roles of large pharmaceutical companies’ in research, and cited six recent U.S. court cases where drug companies had been found to have concealed evidence of harm when conducting their own drug trials. He argues that not only is the influence of pharmaceutical companies malign, but also that other problems also contribute: such as, being able to peruse unfiltered drug company data, receiving such data in a usable form, patient advocacy organisations funded by drug companies, authors beliefs and passions, conflict of interest amongst editorial boards of scientific journals, and anonymous peer review. Although scathing of pharmaceutical companies in general, he was very critical of conflict of interest amongst editors of scientific journals “We would not permit a judge ... to have equity in a for profit prison”.

Gøtzsche proposes the following as partial solutions: truly independent evaluation of new pharmaceuticals, possibly where the pharmaceutical company provides the funding for evaluation to an independent funding body which commissions the evaluation from disinterested research institutions, complete blinding during data analysis, long term follow up of exposed patients to detect later harms, and access to the raw data, protocols, and trial records.

He concluded his presentation with an impassioned plea for courage and the defence of free speech. In light of Chris Del Mar’s earlier presentation, this seemed particularly germane.

The early afternoon session commenced with a series of concurrent workshops. I attended ‘*Case studies on evidence of impact: use of research on clinical guidelines in hospitals*’.

workshop was lead by Dr Tari Turner, Senior Research Fellow at the National Trauma Research Institute at Monash University in Melbourne. Turner is an inclusive facilitator, who has a happy knack of keeping a meeting moving and focused.

The group identified five key requirements for successful guidelines. They must be:

1. Evidence based;
2. Concise and clinically focused;
3. Credible;
4. Multidisciplinary;
5. Up to date.

Several barriers to the development and use of guidelines were also identified. They included individual and institutional capacity, time, previous failure, unclear goals, and mistrust about how and why guidelines are developed and how they may be (mis)used.

Turner also gave her tips on a pragmatic approach to guideline development. Essentially these boiled down to:

- Guidelines take a lot of work, so focus on a few clinically important problems, rather than attempt to develop guidelines to answer every question;
- Search only the Cochrane library and PubMed to systematic reviews and original studies;
- Only consider high quality evidence;
- Don't waste time and money chasing rare or hard to find articles.

Bruce Arroll presented the next combined session. Arroll is the Professor of General Practice at the University of Auckland Medical School and Field co-ordinator for the Cochrane Primary Care Field. Arroll discussed the work of the Field, and in particular the development of clinical PEARLS (Practical Evidence About Real Life Situations) which are a 200 word summary of a Cochrane systematic review relevant to primary care (essentially general practitioners).

Arroll describes PEARLS as a 'push' technology – providing information to subscribers without them having to search for it. He contrasted this with the Cochrane library which he characterises as 'pull' technology – a data source that people need to know exists, and which they actively seek out. Pull technology tends to require higher user interaction and this tends to make it relatively less attractive to busy practitioners, whereas 'push' technology is received with minimal time and effort expended by the recipient, thus appealing to busy clinicians. He described his plans to improve the content and usability of PEARLS in the future. This presentation was clear, concise, pertinent, and grounded the reality of the end-user. Accordingly the practical utility of the content was pleasing.

Russell Gruen is a trauma surgeon and Professor of Surgery and Public Health at Monash University, and Director of the National Trauma Research Institute. Gruen presented on '*Changing Practice: Secondary Care*' and spoke in particular about the secondary care of the injured patient. Here the problem of agreed terminology arises again. I was surprised by his description of hospital trauma care as 'secondary care'. I have always understood trauma surgery to be tertiary care, which follows prehospital (usually paramedic provided) secondary care, which follows first aid provided immediately at the scene, usually by bystanders with minimal training and equipment.

Gruen described the data on mortality and morbidity extracted from the Victorian State Trauma Registry which describes improved patient outcomes over time, and how this work arose from the Consultative Committee on Road Trauma Fatalities in Victoria, Australia. The broader social impact of trauma was highlighted. Gruen then used the ‘rainbow model’ described earlier by Professor Sally Green, and adapted it to trauma care. This presentation, while drawing on some specific data, was a more conceptual general overview applied to trauma care.

Jeremy Grimshaw presented next on ‘*Changing practice: what works and what doesn’t*’. Professor Grimshaw is the Director of the Clinical Epidemiology Program at the Ottawa Health Research Institute in Canada. This presentation covered much of the same ground that Grimshaw traversed when he presented at the Knowledge Translation in Health seminar held the previous week in Melbourne, Australia.

Grimshaw identified four key requirements to answer these questions:

1. A causal description. Did the intervention lead to improved knowledge?
2. A causal explanation. Did the strategy work?
3. Understanding of context modifiers; contexts, groups, individuals
4. Economic evaluation. What did it cost and was it worth it?

Grimshaw argues that as a consequence, a multi-methods approach is needed to answer these questions, and that many evaluations omit some or all of these questions. He further argues that individual studies rarely provide sufficient evidence to support policy and practice changes, and that due to poor design, may be misleading. Consequently they need to be evaluated against the totality of relevant knowledge and that systematic reviews and syntheses are needed to avoid the identified pitfalls. He cautioned however, that systematic reviews cannot overcome weaknesses in the primary studies and that greater rigour is needed when planning such studies.

Rod Jackson is Professor of Epidemiology at the School of Population Health at the University of Auckland. Jackson presented on ‘*Evidence: can we teach it?*’ While Jackson is a very energetic and good humoured and enthusiastic speaker, I was troubled by the content of his presentation. He demonstrated some techniques for teaching epidemiological principles to undergraduate medical students. While fast-paced and full of catchy phrases, it seemed that it was a rather ‘black box’ approach to the topic, which overlooked epidemiological theory and replaced it with snappy tools that can generate a relative risk or an odds ration – without the student necessarily grasping what they are actually dealing with. If this is the case, then it may be that university students’ teaching and learning evaluations have again slain content rigour and claimed another scalp in the name of ‘popularity’.

Dr David Tovey, Editor in Chief of the Cochrane Library gave the final presentation outlining his plans for the organisation in the year or two ahead. This information is of interest only to those engaged in the production of the Cochrane Library and won’t be canvassed here.

Despite some heterogeneity in the quality of presentations, the ‘*Evidence on trial: has it made an impact on health?*’ Conference was overall interesting, well planned and smoothly executed. I would recommend similar Cochrane Collaboration seminars to other readers, especially postgraduate students, clinical leaders and those with a passion for evidence based practice.

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