

A framework for mandatory impact evaluation to ensure well informed public policy decisions

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“Both politically, in terms of being accountable to those who fund the system, and also ethically, in terms of making sure that you make the best use possible of available resources, evaluation is absolutely critical.”

Julio Frenk, Minister of Health, Mexico, 2005¹

Trillions of dollars are invested yearly in programmes to improve health, social welfare, education, and justice (which we will refer to generally as public programmes). Yet we know little about the effects of most of these attempts to improve peoples' lives, and what we do know is often not used to inform decisions. We propose that governments and non-governmental organisations (NGOs) address this failure responsibly by mandating more systematic and transparent use of research evidence to assess the likely effects of public programmes before they are launched, and the better use of well designed impact evaluations after they are launched.

Resources for public programmes will always be scarce. In low-income and middle-income countries, where there are often particularly severe constraints on resources and many competing priorities, available resources have to be used as efficiently as possible to address important challenges and goals, such as the Millennium Development Goals. Use of research evidence to inform decisions is crucial. As suggested by Hassan Mshinda, the Director-General of the Commission for Science and Technology in Tanzania: “If you are poor, actually you need more evidence before you invest, rather than if you are rich.”² But neither the problem nor the need for solutions is limited either to health or countries of low and middle income. Expenditures and the potential for waste are greatest in high-income countries, which also have restricted resources and unmet needs, particularly during a financial crisis. Having good evidence to inform difficult decisions can be politically attractive, as shown, for example, by the US Government's decision to include US\$1.1 billion for comparative research (including systematic reviews and clinical trials) as part of its \$787 billion economic stimulus bill.³

To paraphrase Billy Beane, Newt Gingrich, and John Kerry, who have argued for a health-care system that is driven by robust comparative clinical evidence by substituting policy makers for doctors: “Evidence-based health care would not strip [policymakers] of their decision-making authority nor replace their expertise. Instead, data and evidence should complement a lifetime of experience, so that [policymakers] can deliver the best quality care at the lowest possible cost.”⁴

We use the term impact evaluation to refer both to assessing the likely outcomes of programmes before they are launched and to prospectively planned evaluations that are undertaken after programmes are launched to document actual outcomes relative to what would have happened without the programmes. Some policy makers might not perceive it to be in their interest to commission impact evaluations because their term of office might be short or their motivation ideological. Nonetheless, making impact evaluation mandatory could have several advantages for a growing number of policy makers who do not share that perception, including both elected and non-elected policy makers such as civil servants. It can reduce political risk, because it allows politicians to acknowledge that there is imperfect information to inform decisions about public programmes, and to set in motion ways to change course if programmes do not work as expected. Political risk is greatest when policy makers advocate a programme and then cannot amend it no matter what the results.

Systematic and transparent use of research to assess the likely effects of proposed programmes could also better enable politicians to manage researchers acting as advocates and lobbyists misusing research evidence. It could enable them to ask crucial questions about the research underlying what is being advocated, and to show that they are using good information on which to base their decisions. It could enable them to ensure that research assessing their initiatives is appropriate and that the outcomes being measured are realistic and agreed in advance. It puts them in the politically attractive position of continuous policy improvement and gives them standing in the research process that they otherwise might not have.

“Because professionals sometimes do more harm than good when they intervene in the lives of other people, their policies and practices should be informed by rigorous, transparent, up-to-date evaluations.”

Iain Chalmers, Editor, The James Lind Library, 2003⁵

Decisions about programmes are often made without systematically or transparently accessing and appraising relevant research evidence and without adequate assessment of their effects. We need to make better use of what we already know and to assess better the effects of what we do. Reasons for our failure to adopt this approach include inadequacies with all the following: research, access to available research, capacity to use research appropriately, and management of conflicts of

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For more about the National Council for the Evaluation of Social Development Policy (CONEVAL) see <http://www.coneval.gob.mx>

interest. Research evidence is only one input into policy making. Other information, values, political considerations, and judgments are also important. However, good intentions and plausible theories alone are an insufficient basis for decisions about public programmes that affect the lives of others.^{5,6}

The need to improve the use of research evidence to inform decisions about public programmes is widely recognised. For example, the 58th session of the World Health Assembly passed a resolution acknowledging the 2004 Mexico Statement on Health Research resulting from the Ministerial Summit on Health Research⁷ and urged member states “to establish or strengthen mechanisms to transfer knowledge in support of evidence-based public health and health-care delivery systems, and evidence-based health-related policies.” The Summit requested the Director-General of WHO “to assist in the development of more effective mechanisms to bridge the divide between ways in which knowledge is generated and ways in which it is used, including the transformation of health-research findings into policy and practice.”⁸ In the run-up to the Summit, a case was made for increased investment in health-systems research to address many of the gaps in evidence for appropriate policies and strategies for improving health care.⁹ Around 0.02% of expenditure on health is devoted to such research in low-income and middle-income countries—far too little to provide the quality and quantity of evidence needed for informed decision making.¹⁰ The need to continue to build on what progress that has been made since the Mexico Ministerial Summit was recognised in the 2008 Bamako Statement by ministers of health, ministers of science and technology, ministers of education, and other ministerial representatives from 53 countries.¹¹

Several other calls have been issued for better use of research evidence to improve decisions about public programmes both internationally and nationally. For example, the UK Blair Government in its modernising government agenda stated that “government must be willing constantly to re-evaluate what it is doing so as to produce policies that really deal with problems; that are forward-looking and shaped by the evidence rather than a response to short-term pressures”, and that “better use of evidence and research in policy making” was needed.¹²

A wide range of initiatives have been advocated and implemented to improve the use of research evidence in decisions about public programmes and to address underlying difficulties with research, access to available research, capacity to use research appropriately, and management of conflicts of interest. These include initiatives to prioritise research and align it with countries’ needs; commission research to meet the needs of policy makers for better information; improve the quality of research syntheses and impact evaluations; increase funding for research syntheses and impact evaluations; make research evidence more accessible to policy makers

Panel 1: Evaluation of the social development policy

The Mexican Government passed legislation mandating the assessment of social development policies in December, 2003, which was signed by the president in January, 2004.¹⁸ The legislation established a National Council for the Evaluation of Social Development Policy (CONEVAL). A presidential decree published in August, 2005, regulates the Council.¹⁹ CONEVAL was strengthened and given an expanded scope that now includes all government programmes in the National Development Plan for 2007–12.²⁰ Every ministry now has staff responsible for assessment of its programmes with links to CONEVAL, there are regulations guiding these assessments, and every ministry has to budget for the evaluations of its programmes.

According to the legislation, CONEVAL is an independent public agency under the federal government. It is intended to have the autonomy and technical capacity to generate objective information to improve decision making about social development. The legislation that led to the creation of CONEVAL stipulates that:

- Assessment can be undertaken by the Council or by independent agencies in institutions of higher education or scientific research, or non-profit organisations;
- Programmes should be reviewed regularly to assess whether they are meeting the goals of the social development policy so that they can be corrected, modified, extended, reoriented, or suspended in whole or in part as needed;
- Assessment must include performance indicators for the management and quality of services, coverage, and effect;
- Federal agencies and programmes need to provide necessary information for assessment;

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(eg, through summaries of systematic reviews, clearing houses, and policy briefs); build capacity; and manage conflicts of interest.

A 2005 survey of organisations engaged in supporting evidence-informed policy making identified many health technology assessment agencies and clinical practice guideline developers.¹³ However, the survey noted few examples of organisations that support the use of research evidence for decisions about health programmes. The Evidence-Informed Policy Network (EVIPNet), one response to the Mexico Statement that was launched by WHO in 2005,^{14,15} is trying to address this deficit. It is an attempt to strengthen the links between research and policy in countries of low and middle income. Teams of policy makers from ministries of health and researchers in more than 20 countries have joined the network. The Region of East Africa Community Health (REACH) Policy Initiative, which was established by Kenya, Tanzania, and Uganda, is another example of efforts to foster increased use of evidence in policy making.¹⁶ However, neither EVIPNet nor REACH has sustainable funding yet.

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- The Ministry of Finance and the House of Representatives through the National Auditor can recommend relevant indicators;
- Evaluation results must be published in the Official Journal of the Federation and must be submitted to Congress; and
- The Council should aim to regulate and coordinate assessment of policies and social development programmes and establish guidelines and criteria for the definition, identification, and measurement of poverty, ensuring the transparency, objectivity, and technical rigor in this activity.

CONEVAL now has more than 70 senior staff and a budget of close to US\$10 million for 2009.²¹ Additionally, every ministry is now mandated to commit a part of its budget to evaluation of its programmes. Up to now there have been no formal assessments of the effects of CONEVAL or the legislation that established it, and it is perhaps too early to judge the advantages and disadvantages of this approach to mandating impact evaluations. Evaluation has clearly increased, but to what extent the evaluations are appropriately rigorous and meet the information needs of policy makers are unknown. There is some concern about the need for ministries to commit a proportion of their budget to evaluation without an increase in funds to pay for this approach and the effects that might have on their programmes.

The legislation does not mandate the assessment of the likely effects of programmes before they are launched, and there is not a federal agency similar to CONEVAL responsible for preparation of systematic reviews or policy briefs for this purpose.

Several initiatives have been launched to develop the capacities that are needed for evidence-informed health policy making, but very few have been rigorously assessed.¹⁶ Most have been limited in terms of the breadth of capacities they address—eg, focusing on the capacity of capacities they address—eg, focusing on the capacity of doing research. Few have focused on the capacity of policy makers and civil society to use research, or on making research evidence more accessible to policy makers. The production of systematic reviews has substantially increased over the past two decades, including reviews that are relevant to decisions about public programmes. Two major initiatives to ensure the production, maintenance, and accessibility of systematic reviews are the Cochrane Collaboration and the Campbell Collaboration. The Cochrane Collaboration now has thousands of contributors worldwide and has published more than 3500 reviews. However, many important questions remain, particularly focusing on health issues that are relevant to people living in low-income and middle-income countries, for which up-to-date reviews are not available.¹⁷ Although many governments are providing long-term support to these efforts, most are

not. Several initiatives have promoted impact evaluations, including the International Initiative on Impact Evaluation and efforts by the World Bank and others.

Recognising its political and ethical obligation to assess the effect of policy decisions, the Mexican Government passed legislation requiring that impact evaluations be undertaken for a range of public programmes, explicitly recognising the value of learning what works and why as a guide for future budget decisions (panel 1).

In the USA, the Education Sciences Reform Act of 2002 established the Institute of Education Sciences within the US Department of Education. The mission of this Institute is to provide rigorous evidence for which to guide education practice and policy. In China, the Ministry of Health has created networks of policy makers and researchers, and started activities to build capacity and collaboration in addressing public health challenges. One of the functions of these networks is to foster the generation of relevant evidence and the better use of evidence in decision making.

In Thailand, Article 67 of the 2007 constitution mandates a participatory health and environmental impact assessment, before any public programme that might affect health, natural resources, or the environment can be started. Articles 10 and 11 of the 2007 National Health Act also mandate the government to transparently provide adequate information, and give the community and individuals the right to request for and participate in the assessment of the health impact of public policies. In Colombia, a law was passed in 1994 that gave the National Planning Department the mandate of evaluation, which led to the establishment of a national system for monitoring and evaluation, which has been assessed by the World Bank to be one of the strongest in Latin America.²² None of these or other commitments by governments to make better use of research evidence to improve the lives of their citizens are without shortcomings. They all display different elements of what an ideal commitment might be, and much could be learned from both the successes and failures of efforts to guide and strengthen commitments by governments and NGOs to ensure that decisions about public programmes are well informed by research evidence.

We propose that governments and NGOs recognise their political and ethical obligations to make well informed decisions and to assess the effects of their programmes in legislation. The design of this legislation should be developed on the basis of a thorough review of international experience both with directly relevant legislation, such as the legislation in Mexico, and other relevant initiatives and legislation—eg, with legislation mandating environmental impact assessments and legislative budget processes that need fiscal impact statements to be included for new programme proposals.

The rationale for development of a framework is that formal commitments (legislation) and an international framework to help design these initiatives could increase

For more on the **International Initiative on Impact Evaluation** see <http://www.3ieimpact.org>

For more about the **Institute of Education Sciences** see <http://ies.ed.gov/>

For more on the **Cochrane Collaboration** see <http://www.cochrane.org>

For more on the **Campbell Collaboration** see <http://www.campbellcollaboration.org>

Panel 2: Commitments needed for a framework for ensuring well informed decision making about public programmes

- Adequate funding
- Development of capacity of both researchers to undertake evaluative research and to support policy makers' needs for research, and of policymakers' understanding and ability to use research appropriately
- Organisational structures or processes to lend support to more systematic and transparent use of research evidence to inform decisions before starting new programmes
- Rigorous prospective impact evaluations of programmes, including
 - Planning evaluations in advance
 - Ensuring clear objectives that are aligned to the programmes' goals
 - Measurement of important outcomes and processes
 - Processes for prioritising which programmes are most in need of evaluation
- Effective mechanisms for management of conflicts of interests
- Involvement of the public, including civil society organisations, unions, and professional organisations
- International collaboration to ensure that knowledge and learning are shared, to reduce unnecessary duplication of efforts, and to help to develop capacity
- Avoidance of bureaucratic ineffective structures
- Monitoring and assessment of the implementation and effects of the legislation

the likelihood that good intentions for the use of research evidence to inform policy will be translated into effective actions. The details of any legislation clearly would need to be adapted to a specific context, and such legislation could be introduced in several ways—eg, as part of a general appropriations act, as part of social development legislation (as in Mexico), as part of health legislation, or through regulations for government auditors.

To ease the development and passage of such legislation, we call on WHO to develop a framework for formal commitments by governments to improve the use of research evidence, and the World Health Assembly to endorse the adoption of such a framework. The WHO Framework Convention on Tobacco Control (FCTC) is a potential model for how such a framework might be developed. The FCTC is the first treaty negotiated under the auspices of WHO, and has been signed by 163 countries. Potential lessons to be learned from that experience include the importance of wide involvement of countries and stakeholders in development of the framework, basing it on evidence, mandatory reporting to enable signatories to learn from one another's experiences in implementation of the FCTC, and assessment of progress on the basis of summary analysis of reports and impact evaluation.²³ Panel 2 shows the key commitments that are needed for a framework for ensuring well informed decision making about public programmes.

Monitoring and assessment of the proposed legislation is not only important, but also in keeping with the spirit of this proposal, since there are important uncertainties about the effects of making these commitments into legislation. The legislation could, for example, have undesirable effects, such as inefficient bureaucratic processes, inappropriate inhibition or delay of promising

programmes, creation of political scapegoats, and litigation around the interpretation of evidence. Potential downsides of the legislation that we are proposing need careful consideration and debate, in addition to monitoring, to ensure that legislation is designed to maximise the chances of success and keep the risks of undesirable consequences to a minimum.

Whether countries would want to negotiate these issues in an intergovernmental process, which could take time and resources, is uncertain. However, this challenge is global. Although specific details of any legislation will vary, lessons can be learned through collaboration on the development of a framework. It could also strengthen resolutions such as the Mexico Statement. However, we are not suggesting that the framework should be developed or imposed prescriptively by donors or international institutions. That would be unhelpful and might be harmful. It should be developed consultatively with a strong focus on building within countries the full range of capacity needed to translate research into policies and practices that will improve people's lives.

Commitments such as those shown in panel 2 are needed to ensure politically and ethically responsible investments in programmes to improve health, social welfare, education, and justice. They can help to ensure that good intentions do more good than harm, and that appropriate use of research evidence and impact evaluations become an expected element of decisions about public programmes rather than an optional extra.

Contributors

ADO prepared a first draft of the report. All of the authors contributed to subsequent revisions and endorsed the final version.

Conflicts of interest

We declare that we have no conflicts of interest.

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References

- 1 Moynihan R, Burnes M. Mexico: a comprehensive effort to draw on research evidence to inform the development, implementation and evaluation of the new Popular Health Insurance scheme (video). Appendix 5. In: Moynihan R, Oxman AD, Lavis JN, Paulsen E. Evidence-informed health policy: using research to make health systems healthier. Rapport number 1-2008. Oslo: Nasjonalt kunnskapssenter for helsestjenesten, 2008. <http://www.kunnskapssenteret.no/Artikler/2061.cms> (accessed Sept 9, 2009).
- 2 Moynihan R, Burnes M. REACH Policy Initiative, East Africa: an initiative to create a multi-national unit that will act as a bridge between research and policy in the East African Community (comprising Kenya, Tanzania, and Uganda). Appendix 5. In: Moynihan R, Oxman AD, Lavis JN, Paulsen E. Evidence-informed health policy: using research to make health systems healthier. Rapport Number 1-2008. Oslo: Nasjonalt kunnskapssenter for helsestjenesten, 2008. <http://www.kunnskapssenteret.no/Artikler/2061.cms> (accessed Sept 9, 2009).
- 3 Pear R. US to compare medical treatments. *New York Times* (New York), Feb 15, 2009. <http://www.nytimes.com/2009/02/16/health/policy/16health.html?hp> (accessed Sept 9, 2009).
- 4 Beane B, Gingrich N, Kerry J. How to take American health care from worst to first. *New York Times* (New York), Oct 24, 2008. http://www.nytimes.com/2008/10/24/opinion/24beane.html?_r=2&oref=slogin&ref=opini (accessed Sept 9, 2009).

For more about the WHO Framework Convention on Tobacco Control see <http://www.who.int/fctc/en/>

- 5 Chalmers I. Trying to do more good than harm in policy and practice: the role of rigorous, transparent, up-to-date evaluations. *Ann Am Acad Pol Soc Sci* 2003; **589**: 22–40.
- 6 Macintyre S, Petticrew M. Good intentions and received wisdom are not enough. *J Epidemiol Community Health* 2000; **54**: 802–03.
- 7 WHO. The Mexico statement on health research, 2004. http://www.who.int/rpc/summit/agenda/Mexico_Statement-English.pdf (accessed Sept 9, 2009).
- 8 World Health Assembly. Resolution on health research, 2005. http://www.who.int/rpc/meetings/58th_WHA_resolution.pdf (accessed Sept 9, 2009).
- 9 Task Force on Health Systems Research. Informed choices for attaining the Millennium Development Goals: towards an international cooperative agenda for health systems research. *Lancet* 2004; **364**: 997–1003.
- 10 Alliance for Health Policy and Systems Research. Strengthening health systems: the role and promise of policy and systems research. Geneva: Alliance for Health Policy and Systems Research, 2004. <http://www.who.int/alliance-hpsr/resources/Strengthening-complet.pdf> (accessed Sept 9, 2009).
- 11 WHO. The Bamako call to action on research for health, 2008. http://www.who.int/gb/ebwha/pdf_files/EB124/B124_12Add2-en.pdf (accessed Sept 9, 2009).
- 12 Cabinet Office. Modernising Government White Paper. Cm 4310. London: Stationery Office, 1999. <http://www.archive.official-documents.co.uk/document/cm43/4310/4310.htm> (accessed Sept 9, 2009).
- 13 Moynihan R, Oxman AD, Lavis JN, Paulsen E. Evidence-informed health policy: using research to make health systems healthier. Rapport number 1-2008. Oslo: Nasjonalt kunnskapssenter for helsestjenesten, 2008. <http://www.kunnskapssenteret.no/binary?download=true&id=765> (accessed Sept 9, 2009).
- 14 Hamid M, Bustamante-Manaog T, Dung TV, et al. EVIPNet: translating the spirit of Mexico. *Lancet* 2005; **366**:1758–9. [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(05\)67709-4/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(05)67709-4/fulltext) (accessed Sept 9, 2009).
- 15 EVIPNet Americas Secretariat. EVIPNet Americas: informing policies with evidence. *Lancet* 2008; **372**: 1130–31.
- 16 van Kammen I J, de Savigny D, Sewankambo N. Using knowledge brokering to promote evidence-based policy-making: the need for support structures. *Bull World Health Organ* 2006; **84**: 608–12.
- 17 Volmink J, Siegfried N, Robertson K, Gülmezoglu AM. Research synthesis and dissemination as a bridge to knowledge management: the Cochrane Collaboration. *Bull World Health Organ* 2004; **82**: 778–83.
- 18 Congress of the United Mexican States. General Law of Social Development. Title V. Evaluation of the Social Development Policy. [Ley General de Desarrollo Social. Publicado en el Diario Oficial de la Federación 20 de enero de 2004. Título quinto “De la Evaluación de la Política de Desarrollo Social”.] Mexico: Center for Documentation, Information and Analysis. New Law DOF Jan 20, 2004. <http://www.coneval.gob.mx/contenido/normateca/2348.pdf> (accessed Sept 9, 2009).
- 19 President of the Republic, Government of the United States of Mexico. Decree that regulates the National Council for the Evaluation of Social Development Policy [Decreto por el que se regula el Consejo Nacional de Evaluación de la Política de Desarrollo Social]. Diario Oficial de la Federación, Aug 24, 2005. <http://www.coneval.gob.mx/contenido/quienes/1445.pdf> (accessed Sept 9, 2009).
- 20 President of the Republic, Government of the United States of Mexico. The National Development Plan [Plan Nacional de Desarrollo] 2007–2012. Mexico: Oficina de la Presidencia de la República Mexicana, 2007. <http://pnd.presidencia.gob.mx> (accessed Sept 9, 2009).
- 21 Secretary of Finance and Public Credit. Expenditure Budget of the Federation for Fiscal Year 2009. Mexico: Secretaría de Hacienda y Crédito Público, 2008. http://www.apartados.hacienda.gob.mx/presupuesto/temas/pef/2009/temas/tomos/20/r20_apurog.pdf (accessed Sept 9, 2009).
- 22 Independent Evaluation Group. A Diagnosis of Colombia's National M&E System, SINERGIA. ECD Working Paper Series 17. Washington DC: World Bank, 2007. <http://www.worldbank.org/ieg/ecd/docs/sinergia.pdf> (accessed Sept 9, 2009).
- 23 Fong GT, Cummings KM, Shopland DR, for the ITC Collaboration. Building the evidence base for effective tobacco control policies: the International Tobacco Control Policy Evaluation Project (the ITC Project). *Tob Control* 2006; **15** (suppl 3): iii1–2.