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EVIDENCE-INFORMED HEALTH POLICIES

Sumário

Editorial

Being well informed is better than being misinformed. With regard to the formulation and implementation of health policies and programs it is even more true. The *know-do gap* in the area of health has been a challenge that many initiatives have faced, in order to reduce the gap between scientific knowledge and decision-making in health system policies and management practices, as well as with social deliberation and the shaping of public opinion on health related themes.

In the context of efforts to ensure that scientific knowledge is embedded in a balanced, systematic, and transparent way in the decision-making process, **knowledge translation** is defined by the World Health Organization (WHO) as a **dynamic and interactive** process of synthesis, dissemination, exchange and ethical application of knowledge to improve the health of individuals and populations through the provision of effective services and products in the health system[II]. Translate is move from one language to another[III], but it also means to create understanding, clarify, make an idea transparent, ending a communicative process. Therefore, the knowledge translation consists of a highly relevant mechanism to strengthen the communicative process between researchers, decision makers and civil society.

The premise that decision-making by Governments and social deliberation are increasingly well informed by scientific evidence constitutes the core of a global effort, championed by WHO, to support the construction and strengthening of platforms of knowledge translation[IV]. In this context, **Evidence-Informed Policy** Network - EVIPNet is an initiative formed by countries from all regions of the globe, whose goal is to promote the use of scientific evidence in the formulation and implementation of health policies, through exchanges between civil servants in management positions, researchers and representatives of civil society. The EVIPNet, therefore, promotes the Evidence-Informed Policy (EIP), an approach to allow the decision-making process in the formulation and implementation of health policies to be based on the best local and global evidence, in a systematic and transparent manner. In Brazil, the network is coordinated by the Ministry of Health working in tandem with groups located in research institutions, including the Institute of Health of São Paulo, management institutions and non-profit organizations.

This issue of the Bulletin of the Institute of health (BIS) is pioneer in dealing with the themes of **knowledge translation** and the **EIP**, and presents the result of the beneficial collaboration present in EVIPNet Brazil, whose participants, groups and

[I] WHO. Bridging the "Know-Do" Gap: Meeting on Knowledge Translation in Global Health, 10-12 October 2005. World Health Organization. Contract No.: WHO/EIP/KMS/2006.2.

[II] Houaiss, Antônio; Villar, Mauro. Dicionário Houaiss. Dicionário Houaiss. 3, 2009

[III] World Health Assembly. Resolution on health research. Available in: http://www.who.int/rpc/meetings/58th_WHA_resolution.pdf 2005

institutions are united by the goal of supporting this initiative in the country.

The articles included in this issue of BIS deal with two complementary positions. The first focused on conceptual and methodological aspects of the EIP, which contribute to the discussions that happen and are increasingly more common in Brazil in both academic and management environments. The second position presents the results of the use of concepts and methods in the production of summaries of evidence and studies of health technology assessment on issues highly relevant to public health, as well as case studies aimed at developing knowledge translation platforms, both in local and national level.

Chapman (in Spanish and Portuguese) covers the main aspects related to knowledge translation for the formulation of policies and decision-making processes, from methodological concepts, evolution of these concepts over time, models and strategies to facilitate these processes, the importance of implementation and considerations about equity, and the need to monitor and evaluate these courses of action.

Wichmann et al. report the experience of implementation of the plan of action of EVIPNet Brazil, describing its training activities, support to the development of the network, knowledge translation products and dissemination. They discuss its relevance to the consolidation of the initiative as a knowledge translation platform to SUS.

Haby and Clark (in English and Portuguese) discuss the significance and limitations of quick response programs to subsidize evidence-informed policies. Quick response programs are proposed to facilitate the use of scientific evidence through the work shared among researchers and civil servants in management positions.

Barreto and Toma present the main aspects of the tools *SUPPORT - Supporting Policy Relevant Reviews and Trials* - to develop evidence-informed health policies. These tools are especially useful for teams that want to produce, with the utmost rigor, documents known as summaries of evidence to deal with issues relevant to public health.

Abdala approaches the access to and use of evidence to inform the processes of policy formulation and decision-making in health, and the challenge for policy makers and decision makers about where to get this evidence in a universe of millions of documents. In the article the main sources of information where such evidence can be found are presented.

Silva and Galvão present concepts and methods of interpretation of scientific evidence of complex interventions evaluated in systematic reviews. Complex interventions are a constant within the EIP and generally involve changes in behavior among their goals. Systematic reviews are secondary studies used for the proposition of options for dealing with a given health problem. In order to contextualize the location and critical assessment of systematic reviews on complex interventions, the authors bring a scenario of strengthening of the culture of patient safety in hospitals.

Reveiz et al. address the components, advantages and disadvantages of adopting Clinical Protocols, as well as the development process and its effects in the countries of Latin America and the Caribbean. The authors show us that the process of elaboration of Clinical Protocols has strengthened over the past decade, due to the institutional use in the public sector, favoring the effectiveness of standardization of delivery of health services.

Santos and Costa analyze changes in the health area that correlate with the field of journalism, focusing on Evidence - Based Medicine.

These practices go beyond the production and use of scientific knowledge reaching the activities of popularization of knowledge about health, including in journalism.

Cardoso et al. present a synthesis of evidence compiled in the framework of the Program of professional improvement in public health at the Institute of Health, with the aim of supporting the development of a health policy for the control of diabetes mellitus type 2 in Franco da Rocha, an issue of high relevance for the local health system.

Figueiredo et al. also feature a summary of evidence developed in the Program of professional improvement in public health at the Institute of Health, with the goal of supporting the municipal health management of Franco da Rocha in decision-making to fight against maternal mortality, which in addition to being relevant to the local level, also represents a national problem of great complexity.

The summary of evidence presented by **Ribeiro et al.** also drafted in the Program of professional improvement in public health of the Institute of health, is intended to contribute to a policy to reduce the prescriptions of antidepressants in the local level.

Gaiotto and Venâncio present the main results of a summary of evidence developed in the Program of Professional Masters in public health at the Institute of health, aimed at reducing perinatal mortality in the city of Porto Feliz. In another article these authors describe the experience of implementing a Center of Evidence in a medium-sized municipality in the State of São Paulo and the stages of development with a multidisciplinary team for the definition and characterization of a priority health problem for the preparation of an evidence brief.

In the section "Evaluation of Health technologies - Scientific Reports" two articles are presented. **Toma and Soares** discuss quick reviews employed in the context of decision making in the health system. Despite the increasing discussion around quick reviews in recent years, there is still no consensus in the international community regarding the definition of this term, on the length of this type of study and on the standard of the methodology and its applications. And **Albuquerque and al.** report the results of the economic analysis, reduction of costs, about the assistance to newborn babies in the first hour of life using the maternal Top in comparison to the cradle of radiant heat.

This is certainly a special edition of BIS, because it addresses a theme whose discussion is still insufficiently present in academic and management practices, and also for bringing a set of results of the application of the concepts and methods of knowledge translation to the EIP. We hope that our readers feel informed, involved and motivated by the discussions, results and experiences presented.

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Knowledge Translation Mechanisms for Evidence-Informed Policymaking

Evelina Chapman[I]

Abstract

This paper discusses and proposes a few methodological concepts about the translation of knowledge into the policymaking and decision-making processes and the evolution of some key concepts, models, and strategies to make processes easier over time. It also discusses the importance of implementation, considerations of equity, and the need for monitoring and assessment in these courses of action.

Keywords: knowledge translation; evidence-informed policies; implementation; equity; EVIPNet

Introduction: key concepts

There are different definitions about what public policy is. Maybe what comes closest to our definition of evidence-informed policy (EVIP) is that of a "government intervention, expressed in a decision or set of decisions by a public authority, that considers a technical and rational analysis for a given topic and a specific purpose and that follows formal procedure, all of which takes place within a context of an intense political process of opposition and coordination of interests[5]." This definition includes the recognition and the role debate plays in the policymaking process, which leads us to understand the interests their participants promote and that will end with the public-policy decision. It is clear these concepts fail to mention the incorporation of evidence into policymaking, but this is an approximate definition.

When we talk about evidence, firstly, we are talking about science and, within the context of healthcare, we must interpret it in light of notions of *proof* and rationality. We also know science is neither static nor a simple formula. Relying on evidence ranges from not having any evidence to having irrefutable evidence[7]. The very core of all definitions of *evidence* is that, while it is being built, it requires independent observation and verification. This concept does not suggest replacing one type of research with another. Instead, it highlights the importance of making sure that the evidence being used to enlighten the practice, programs, and policies – in our case – has been scrutinized[17]. Thus, evidence is much more than just research. It includes a great deal of contextual information. We should not look at evidence as putting an end to the healthcare debate. Instead, it is way of elevating the level of discourse around major decisions. To this end,

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talking about *evidence-informed* policies is more appropriate than talking about *evidence-based* policies.

It is also worth noting that evidence in and of itself is not enough to make decisions. We have to reconcile evidence from scientific research, the "global evidence" – that is, the best evidence available anywhere in the world – with evidence from decision-makers – colloquial evidence –, who, to us, are the experts in political decision-making. Decision-makers know about evidence more informally. They combine and interpret facts. So, we may consider expert opinion a little more than just evidence and including it in the decision-making process is paramount[14].

The knowledge translation process for health policies

Any knowledge acquired thanks to research and experience is of little help if it cannot be translated into action[18]. Said action entail using such knowledge (evidence) in medical practice, management, as well as healthcare-system-related policymaking and decision-making. Knowledge translation has turned into a paradigm to face many of the issues this mismatch, which still exists, between theory and practice poses and to try and close this gap[18]. For evidence to be useful for decision-makers, it must be searched, retrieved, evaluated, and presented as intervention options in healthcare-system-oriented policies[1].

There are various factors that would require the use of evidence by decision-makers. On the one hand, there are factors that pertain to knowledge characteristics from the moment when not all evidence is compelling and, on the other hand, factors that are associated with the interrelationships between decision-makers, researchers, and the context.

Usually, the evidence of scientific research is more convincing than isolated observations. This is closely related to the class of observations being made (the type of research design) and how well they were made (internal validity). According to Fafard, scientific evidence is the element that affects the selection of some programs / policies where research results and transfer processes are critical, but fail to tell the whole story, and the role evidence plays will vary, depending on the decision-making processes into which it is incorporated[3].

In this process, it is also important to factor in opinions about how much confidence can one have in different types of evidence. These opinions may be given implicitly or explicitly. To this end, it is better to have these opinions systematically and explicitly in order to prevent errors, settle disputes, make critical evaluation easier, and communicate evidence transparently[2].

What complicates analysis even more is that there are different stages or steps in the policymaking process. First, there is the need to draft and, if possible, quantify, as accurately as possible, the nature of the problem once it is on the political agenda. Secondly, there is the need to identify the range of available policy instruments or options and their potential effectiveness. Lastly, there is the need to track the implementation process by exploring what is required, such as funds as well as managerial and organizational resources[8].

The different types of policies and the different steps of the decision-making process will require different types of evidence, including evidence about the enforceability or political acceptability of a policy. In general, when we are looking for an effective intervention or policy option, we will think more about reviewing randomized clinical trials. If we think about

implementing policy options, we will focus more on qualitative studies that will allow us to approach the obstacles and facilitators of these processes. In this regard, thinking about methodological pluralisms instead of paradigmatic antagonisms is key.

How do evidence and the decision-making process work in the real world?

Let us use, as an example, interventions that were effective (and that, actually, stem from reportedly high-quality research, such as clinical trials and systematic reviews), but *failed* in their implementation – and expected result – because they did not take contextual *evidence* into account.

This pertains to a malaria (plasmodium infection) management program in Peru. Research authors claim there is scarce scientific literature that describes successful policies in malaria control program where the replacement of one drug with another that is proven to be scientifically more effective constitutes only a portion of the process. A qualitative research through in-depth interviews, focal groups, and document review tried to understand the complex process that took place in Peru to deal with the issue of growing resistance to antimalarial medication. Problems inherent in failure were identified, local evidence to justify a change in policy was generated, the favorable and enabling political change was used and, all in all, everything pointed to a better control of the disease in Peru[19]. The change in policy – and the improved results – to treat malaria in Peru occurred very quickly – compared to other countries – and qualitative research into the application context played a key role.

We also said the knowledge translation processes will also depend on the interaction between researchers and decision-makers. Innvaer *et al.* conducted a systematic review in order to describe decider perceptions about the use of scientific evidence in the decision-making processes at the different levels of the healthcare system. The scientific study identified that the most frequent obstacles included the absence of personal contact between deciders and researchers, the lack of relevance or opportunity of the research; the mutual suspicion between researchers and decision-makers, and power and budget conflicts[6]. This systematic review's findings majorly contributed to the design of better strategies to make the knowledge translation processes easier.

Among these strategies, we could mention the inclusion of a model to formulate evidence-informed policies that was led by John Lavis and published by the World Health Organization (WHO)[9], where five elements are taken into account: a) the climate for evidence-informed policies, which entails counting on regulatory frameworks, standards, resolutions, and even laws to support the use of research; b) the push of the evidence – such as, for instance, the production and spread of summaries of existing systematic reviews; c) the pull of the evidence by accessing existing systematic reviews, economic assessments, evidence summaries for policymaking, and so forth; d) mechanisms that facilitate the incorporation of evidence – pull – by training and / or educating research users; e) knowledge translation and exchange – the use of dialogue to deliberate on policy documents prepared by deciders, researchers, and representatives of civil society that have a stake in the outcome of the implementation of

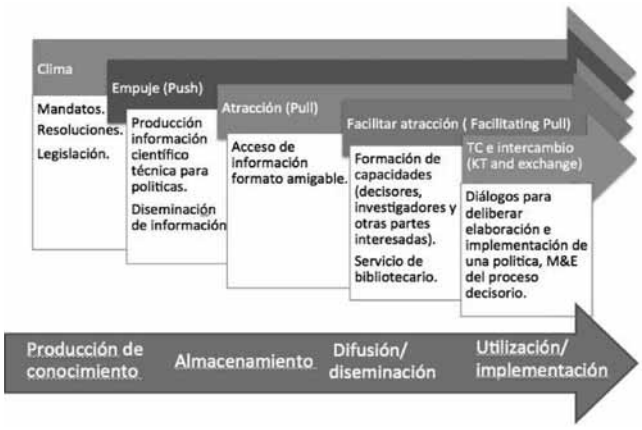
these policies so there is a closer collaboration among them (Figure 1).

Out of the aforementioned strategies, those with empirical evidence to back them up are fundamentally those framed by the push-and-pull mechanisms and the tools that make it easier to use the evidence. Examples include the use of specific messages sent to stakeholders and training in the use of evidence. Also, the spread of relevant information (evidence) through the Internet, such as, for instance, the use of newsletters containing summarized evidenced and some multifaceted interventions. Activities, such as creating the climate and / or facilitating exchanges, still need more evidence of their effectiveness. Most of these strategies were used in knowledge translation processes in the field of practice, but very few of them in evidence-informed policymaking processes[2,10,12,13,16].

How are policy options implemented?

The policy implementation process should be carefully planned and could also be better conducted if it were informed by evidence[4,11]. It is always going to be a matter of implementing policy options in a complex context where various levels, organizations, and stakeholders must be taken into account either individually or collectively in the processes. The implementation always implies changes. There is no standard method to identify barriers to change. Oftentimes, this process is conducted informally and unsystematically, where barriers are identified by key process informants. Analyzing them is necessary to be able to search and find all the available evidence so as not to implement them within a context of uncertainty. Global and local qualitative researches helped identify them and approach them as well. Structured brainstorming and polls could be used. There are also theoretical frameworks and checklists experts could use as guidance. When we talk about the healthcare system exclusively, we have barrier analysis levels in users, professionals, the organizational level, and the healthcare system itself.

Figure 1 - Proposed Model to Facilitate Knowledge Translation (KT) in EVIP



Adapted from Knowledge Translation Framework for Ageing and Health. Geneva: Department of Ageing and Life-Course, World Health Organization, 2012.[9]

Why consider equity?

Equity considerations are a key aspect that deserves a separate paragraph. Inequalities must always be analyzed, when presenting an issue, considering options, and when entertaining the aspects of implementation. If a policy is going to generate inequality, it should be dismissed or alternatives to minimize this effect should be searched. For instance, if I am thinking about an intervention that entails the use of cell phone messaging, I should think about the availability of cell phones in all population groups targeted by the intervention and their ability to understand texts. There are also frameworks[II] that could guide the evaluations of potential impacts that

[II] http://www.nccmt.ca/resources/search/234

the option of a policy or a program could have on the underprivileged and equity[15].

Finding evidence of the impact of most healthcare policies on inequalities is not an easy task. For instance, some strategies are analyses by subgroups that look for differences in systematic reviews or individual studies when the former are unavailable. In fact, many policies may cause similar relative effects on more disadvantaged locations and anywhere else. A second strategy is looking at the differences of absolute effects and not just relative effects. Once we learn it is very likely that evidence in this field will be limited, it is important we make sure that the monitoring and assessments of the impacts on equity will be as strict as possible to ensure the achievement of the desired effects and to avoid undesired adverse effects. To this end, proper indicators from social strata and change measurements must be used[19].

Concluding remarks

As a last thought, we can say that evidence-informed policies (EVIP) must be systematic and transparent processes to access, evaluate, adapt, and apply scientific evidence. In these EPB processes, a key concept is that we are not thinking about turning researchers into deciders, and vice versa. The production of knowledge and evidence by each player is very different. Fundamentally, researchers use the scientific method and deciders use tacit knowledge and experience. The idea is that both make up a body of evidence that will be key for the decision-making process and is definitely as important as measuring and evaluating what we have decided and implemented to know whether our decisions were appropriate and just.

Lastly, we must mention that there are global initiatives that enable knowledge translation processes in policymaking, such as the World Health Organization's Evidence-Informed Policy Network (EVIPNet). Its regional chapter was released in the Americas through the Pan American Health Organization – World Health Organization in 2007 and there have been different developments[III]. Brazil is a key example, which is partly described in this special issue.

References

1. Bosch-Capblanch X, Lavis JN, Lewin S, Atun R, Røttingen J-A, et al. Guidance for evidence-informed policies about health systems: rationale for and challenges of guidance development. PLoS Med 2012;9(3):e1001185. doi:10.1371/journal.pmed.1001185.

2. Dobbins M, Hanna SE, Ciliska D, Manske S, Cameron R, Mercer SL, et al. A randomized controlled trial evaluating the impact of knowledge translation and exchange strategies. Implement Sci. 2009;4:61.

3. Fafard P. Evidence and healthy public policy: insights from health and political sciences. Canada: National Collaborating Centre for Healthy Public Policy. 2008. Available at: http://www.ncchpp.ca

4. Fretheim A, Munabi-Babigumira S, Oxman AD, Lavis JN, Lewin S: SUPPORT Tools for evidence-informed health Policymaking (STP). 6. Using research evidence to address how an option will be implemented. Health Research Policy and Systems. 2009 [retrieved: April 20, 2016];7(Suppl 1):S6 doi:10.1186/1478-4505-7-S1-S6.]. Available at: http://www.health-policy-systems.com/content/pdf/1478-4505-7-S1-s6.pdf

5. Gambi MO. Conceptos básicos en el análisis de políticas públicas. Chile: Departamento de Gobierno y Gestión Pública del Instituto de Asuntos Públicos de la Universidad de Chile; 2007. (Work Documents, 11). [retrieved: April 1, 2016]. Available at: http://repositorio.uchile.cl/bitstream/handle/2250/123548/Conceptos_%20Basicos_Politicas_Publicas.pdf?sequence=1

[III] http://www.paho.org/portalinvestigacion/EVIPNet

6. Invaer S, Vist G, Trommald M, Oxman A. Health Policy-makers´ perceptions of their use of evidence: a systematic review. J Health Serv Rs Policy. 2002; 7(4):239-44.

7. IOM -Institute of Medicine. Environmental health sciences decision making: risk management, Evidence, and Ethics: Workshop Summary. Washington, DC: National Academies; 2009.

8. Klein R. Evidence and policy: interpreting the Delphic oracle. Journal of the Royal Society of Medicine. 2003;96(9):429-31.

9. WHO-World Health Organization. Knowledge Translation Framework for Ageing and Health. Geneva: Department of Ageing and Life-Course; 2012.

10. LaRocca R, Yost J, Dobbins M, Ciliska D, Butt M. The effectiveness of knowledge translation strategies used in public health: a systematic review. BMC Public Health. 2012;12:751

11. Lavis JN, Wilson MG, Oxman AD, Grimshaw J, Lewin S, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP). 5. Using research evidence to frame options to address a problem. Health Research Policy and Systems; 2009 [retrieved: April 20, 2016];7(Suppl 1):S5 doi:10.1186/1478-4505-7-S1-S5. Available at: http://www.health-policy-systems.com/content/pdf/1478-4505-7-S1-s5.pdf

12. Moore G, Redman S, Haines M, Todd A. What works to increase the use of research in population health policy and programmes: a review. Evidence & Policy. 2011;7:277-305

13. Murthy L, Shepperd S, Clarke MJ, Garner SE, Lavis JN, Perrier L, et al. Interventions to improve the use of systematic reviews in decision-making by health system managers, policy makers and clinicians. Cochrane Database Syst Rev. 2012; Issue 9:Art. No. CD009401.

14. Oxman AD, Lavis JN, Lewin S, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP) 1: What is evidence-informed policymaking? Health Res Policy Syst. 2009;7 (Suppl 1):S1. doi: 10.1186/1478-4505-7-S1-S1.

15. Oxman AD, Lavis JN, Lewin S, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP). 10. Taking equity into consideration when assessing the findings of a systematic review. Health Research Policy and Systems; 2009 [retrieved: April 20, 2016];7(Suppl 1):S10 doi:10.1186/1478-4505-7-S1-S10. Available at: http://www.health-policy-systems.com/content/pdf/1478-4505-7-S1-s10.pdf

16. Perrier L, Mrklas K, Lavis JN, Straus SE. Interventions encouraging the use of systematic reviews by health policymakers and managers: a systematic review. Implement Sci. 2011;6:43.

17. Rycroft-Malone J, Seers K, Titchen A, Harvey G, Kitson A, McCormack B. What counts as evidence in evidence-based practice? Journal of Advanced Nursing. 2004; 47(1):81-90.

18. The Mexico Statement on Health Research. Knowledge for better health: strengthening health systems. In: The Ministerial Summit on Health Research, Mexico City; 2004. Nov 16-20. [retrieved: April 20, 2016]. Available at: http://www.who.int/rpc/summit/agenda/en/mexico_statement_on_health_research.pdf

19. Williams HA, Vincent-Mark A, Herrera Y, Chang OJ. A retrospective analysis of the change in anti-malarial treatment policy: Peru. Malar J. 2009;8:85.

Consolidation for Evidence-Informed Policy Network - EVIPNet Brazil: report of the national experience of building a knowledge translation platform for Brazilian Public Healthcare System (SUS)

Roberta Moreira Wichmann[I], Eliana Carlan[II], Jorge Otávio Maia Barreto[III]

Abstract

This article examines the implementing of the action plan for Evidence-Informed Policy Network (EVIPNet Brazil), describing its activities from January/2013 to March/2016 and discussing its relevance to the consolidation of the initiative as a knowledge translation platform for the Brazilian Public Healthcare System (SUS). A case study was written using a descriptive approach. The data were collected by the Executive Secretary of EVIPNet Brazil, by analyzing the annual reports and directly consulting the coordination of the Network in the Brazilian Ministry of Health. The study identifies activities in four categories: training activities, support to the development of the network, knowledge translation products and diffusion and dissemination activities. The most relevant activities include capacity building for implementation of the SUPPORT tools, *lato sensu* graduate and online courses, public call press-release to support projects, building summaries (Evidence Brief for Policy), deliberative dialogues organizations, scientific articles publication, website maintenance, performance in virtual social networks and participation in scientific and management events. The results showed sustained growth of the activities of EVIPNet Brazil and suggest that the network is becoming a robust instrument of knowledge translation in Brazil.

Keywords: Evidence-Informed Policy, knowledge translation and EVIPNet Brazil.

Introduction

In May 2005, the World Health Organization (WHO) urged its Member States to establish or strengthen mechanisms to support and promote the use of scientific knowledge within health systems and policies.[13]

In public health modern practice it is broadly accepted that scientific evidences may support more effective policies with better cost-benefit and more results, also favoring transparency in decision-making and accountability.[4]

Evidence-Informed Policymaking (EIPM) refer to the systematic and transparent use of research evidence, along with other important elements as context, acceptance of the interested parties, feasibility of implementation and equity.[2,11]

Knowledge translation was defined by WHO as the summary, interchange and ethical application of scientific knowledge to strengthen health systems and improve people's health.[3,14] Knowledge translation seeks to address the challenges of using scientific evidences, in order

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to reduce the gap between generated evidence and decision-making (translation of knowledge for action). The term "knowledge translation" has been used to described the range of strategies to address the barriers for evidence-based decision-making.[1]

The Evidence-Informed Policy Network – EVIPNet – emerged from an initiative of WHO to promote the use of scientific evidences to prepare and implement policies, programs and health services, upon the interchange between managers, researchers and representatives of the civil society.

EVIPNet Brazil coordination is made by its Executive Secretariat headquartered in the General Coordination of Knowledge Management of the Department of Science and Technology of the Secretariat for Science, Technology and Strategic Inputs of the Ministry of Health (CGGC/Decit/SCTIE/MS). EVIPNet acts as a knowledge translation, a mechanism that facilitates the incorporation of the scientific production results in order to obtain more effective health public policies. EVIPNet Brazil was recognized within the scope of the Ministry of Health through Ordinance no. 2.636/GM/MS dated October 7, 2009[5], which established and defined the attributions of its advisory council as a concrete response to the WHO global call. On September 12, 2013, the composition of EVIPNet Brazil advisory council was updated by Ordinance no. 2.001/GM/MS[6], to include all secretariats of the Ministry of Health (MS) along with other entities part of the network, namely: Pan American Health Organization (PAHO/WHO), Latin American and Caribbean Center on Health Sciences Information (Bireme/PAHO/WHO), National Council of Health Secretaries (Conass), National Council of Municipal Health Secretaries (Conasems), Brazilian Association of Collective Health (Abrasco) and Oswaldo Cruz Foundation (Fiocruz).

Since its creation in 2007, EVIPNet Brazil has been regionally contributing to EVIPNet Americas, as well as EVIPNet Global through different actions, especially to disseminate and interchange lessons learned and strategies developed in Brazil. Therefore, activities are registered for this purpose, such as participations in congresses, meetings and international events, organization of qualification workshops in methods to support EIPM and policies deliberative dialogues, promotion of the use of scientific evidence in formulation processes and implementation of health policies, preparation of evidence briefs for policies and policies dialogues, and national articulation of member institutions that comprise the network and partner institutions.

EVIPNet Brazil is now comprised by 16 Working Groups (WG), out of these 12 consist in the so-called Evidence Centers (NEv), a configuration adopted by the network to ensure greater institutionalism in the implementation of processes of the groups. Details on WG of EVIPNet Brazil are shown on Table 1. NEv and WG basically perform the same roles as members of the network; the only difference is the way they are institutionalized to EVIPNet Brazil. Such collaborative groups are formed by representatives of headquarter institutions, researchers and specialized professionals in the health area to disseminate qualification courses, prepare evidence briefs for policies and organize deliberative dialogues using Supporting Policy Relevant Reviews and Trials (SUPPORT Tools)[7], the main methodological reference of EVIPNet.

Table 1 – Working Groups and Evidence Centers until December 2015

Headquarter Institution	City	State	Type	Year of creation
Municipal Secretariat of Health (SMS)	Piripiri	PI (Piauí)	NEv*	2010
Municipal Secretariat of Health (SMS)	Sobral	CE (Ceará)	NEv	2013
Municipal Secretariat of Health (SMS)	Recife	PE (Pernambuco)	NEv	2013
Health Science Teaching and Research Foundation (FEPECS)	Brasília	DF (Federal District)	NEv	2013
Department of Management of Health Technologies Incorporation of the Secretariat of Science, Technology and Strategic Inputs of the Brazilian Ministry of Health (DGITS/SCTIE/MS)	Brasília	DF (Federal District)	WG**	2013
Public Health School (ESP)	Belo Horizonte	MG (Minas Gerais)	NEv	2013
National Institute of Cardiology (INC)	Rio de Janeiro	RJ (Rio de Janeiro)	NEv	2014
Cancer National Institute (INCA)	Rio de Janeiro	RJ (Rio de Janeiro)	NEv	2014
Federal University of Minas Gerais (UFMG)	Belo Horizonte	MG (Minas Gerais)	NEv	2014
Health Institute of the São Paulo State Secretariat for Health (IS/SES-SP)	São Paulo	SP (São Paulo)	NEv	2014
Oswaldo Cruz Foundation (FIOCRUZ)	Brasília	DF (Federal District)	NEv	2014
Department of Pharmaceutical Care of the Secretariat of Science, Technology and Strategic Inputs of the Brazilian Ministry of Health (DAF/SCTIE/MS)	Brasília	DF (Federal District)	WG	2014
Public Health School	Fortaleza	CE (Ceará)	NEv	2014
Regional University of Cariri	Cariri	CE (Ceará)	NEv	2014
Cardiology Hospital (HCor)	São Paulo	SP (São Paulo)	WG	2015
Health and Sustainability Institute (ISS)	São Paulo	SP (São Paulo)	WG	2015

Source: Executive Secretariat of EVIPNet Brazil, Decit/SCTIE/MS
* Evidence Center, ** Working Group.

The purpose of this article is to describe the EVIPNet Brazil expansion activities from January/2013 to March/2016 and discuss its relevance to consolidate the initiative as a knowledge translation platform for the Brazilian Public Healthcare System (SUS).

Method

This is a case study that uses the same descriptive approach to present activities developed by EVIPNet Brazil network from January/2013 to March/2016. The data were collected by the Executive Secretary of EVIPNet Brazil, by analyzing the annual reports of activities and other technical reports, as well as directly consulting the involved parties with coordination activities of the network in the Brazilian Ministry of Health.

Results

Activities developed by EVIPNet Brazil throughout the analyzed period can be classified into four categories: qualification activities, support to the network development, production of knowledge translation reports and promotion and dissemination activities. The most relevant aspects of such activity groups of the network are detailed below.

Capacity building activities

It was noted that EVIPNet Brazil has been working in different fronts including on-site and online capacity building strategies, as well as comprising different training levels, from short-term course to graduate *lato sensu*.

SUPPORT Tools training for Evidence-Informed Policies - short-term courses and workshops.

Courses and workshops to produce, assess, disseminate and use evidence briefs for policy is a promising approach to the integration and contextualization of research evidences in the decision-making process. The guiding methodology adopted by EVIPNet is strict and transparent, and follows the steps below: 1) definition and characterization of a high priority problem related to policy, services of health systems; 2) definition of options to face it; 3) identification of barriers and facilitators to implement coping options. The evidence briefs for policy should respond to the need and context of the decision-maker. Courses and workshops are delivered by experts in knowledge translation.

At least 532 people were trained in methods to support EIPM adopted by EVIPNet Brazil on 26 on-site workshops that lasted 16 to 32 hours involving representatives of 113 local, state and national institutions from 2013 to 2015 as presented on Table 2.

Table 2 – Capacity Building Activities on SUPPORT Tools, 2013-2015

Place	Type of activity	Partner institutions in the realization (*)	Number of workshops/ meetings	Number of participating institutions	Number of participants in activities
Brasília – DF	Workshop/Workshop 1st Call/Workshop International/ Technical Meeting/Strategic Workshop	MS[a]/Mercosul[b], Fiocruz[c], Fepecs[d]	10	37	189
Belo Horizonte – MG	Workshop	UFMG[e], AMMG[f]	2	10	46
Fortaleza – CE	Workshop	ESP[g]/URCA[h]	1	8	22
Maputo/Mozambique	International Workshop	UEM[i]	1	3	15
Recife – PE	Workshop	SMS[j], IMIP[k]	2	12	56
Rio de Janeiro – RJ	Workshop/Technical Meeting	INC[l], INCA[m], Fiocruz[n]	5	15	93
São Paulo – SP	Workshop	HCOR[o], IS/SES-SP [p], BIREME[q]	3	17	64
Sobral – CE	Workshop	SMS[r], EFSF[s]	2	11	47
Total			**26**	**113**	**532**

Source: Executive Secretariat of EVIPNet Brazil, Decit/SCTIE/MS

(*)[a] Brazilian Ministry of Health, [b] Common Market of the South, [c] Oswaldo Cruz Foundation, [d] Health Science Teaching and Research Foundation, [e] Federal University of Minas Gerais, [f] Medical Association of Minas Gerais, [g] Public Health School, [h] Regional University of Cariri, [i] Eduardo Mondlane University (Mozambique), [j] Municipal Secretariat of Health of Recife, [k] Institute of Integral Medicine Professor Fernando Figueira, [l] Institute of Cardiology, [m] National Institute of Cancer, [n] Oswaldo Cruz Foundation, [o] Cardiology Hospital, [p] Health Institute of São Paulo Health State Secretariat, [q] Latin American and Caribbean Center on Health Sciences Information, [r] Sobral Municipal Health Secretariat, [s] Family Health Training School.

Course of Specialization on Evidence-Informed Policies Management

In 2014, the Brazilian Ministry of Health, through EVIPNet Brazil proposed and planned in partnership with the Institute of Teaching and Research of Sírio-Libanês Hospital (IEP-HSL), a *lato sensu* graduate course (specialization) in Evidence-Informed Health Policies Management (ESPIE). This course is the result of a partnership between the Brazilian Ministry of Health, Sírio Libanês Hospital, National Council of Health Secretaries and the Ibero-American Observatory on Health Policies and Systems (OIAPSS) within the scope of the SUS Institutional Development Support Program (PROADI-SUS) and had the purpose of supporting the qualification of managers and other actors involved in the health decision-making process through the systematic and transparent use of scientific knowledge. The course was launched in 2015 and is targeted to high and medium-ranked policymakers and decision-makers at the municipal, state and federal levels, managers of local health systems, health management supporters, researchers interested in the subject, and members of the social health control. It intends to contribute to overcome the

know-do-gap barriers or the gap between theory and practice in public policies for health, especially scientific knowledge and policy formulation and implementation processes. Total class is 360 hours supported by an interactive virtual platform and learning facilitators. The first ESPIE edition included 400 students locally selected and divided into ten classes, out of which eight in Brazil (Porto Alegre, Curitiba, Belo Horizonte, Vitória, Brasília, Goiânia, Fortaleza and Manaus), one in Argentina (Córdoba) and one in Uruguay (Montevidéu). Cities were chosen considering the geographical distribution and favorable history of courses of Sírio Libanês Hospital along with the need for local support for the course development, validated along with institutional partners. ESPIE classes in Latin American countries was made possible for the partnership with OIAPSS, represented by Conasems.

Introductory Course for Evidence-Informed Policies *(online)*

EVIPNet Brazil developed and launched the first edition of EIPM introduction online course (http://www.aulas.cvspbrasil.fiocruz.br) in partnership with Bireme/PAHO/WHO, with the purpose of promoting the culture of the use of evidences on decision-making in health systems, programs and services by offering subsidies to technical areas in the preparation of policies informed by the best scientific evidences and development of competencies to obtain, assess, adapt and apply the scientific findings in health political decisions. The course, with duration of 80 hours, has the purpose of involving systems and health services managers, its technical supporters, researchers and members of the civil society interested in addressing knowledge translation processes and EIPM The course is entirely online and has specialized tutor; it is structured in nine modules operating in an articulated way between content, memorization exercises, real case studies and reading suggestions. By the end of the first course edition, 106 participants were trained in SUPPORT Tools. In that same year, the course had its second edition with 600 people enrolled. Activities were ended in January 2016.

Network support activities

First EVIPNet Brazil Public Notice to support EIPM projects

In August 2015, EVIPNet Brazil, through its Executive Secretariat headquartered in Decit/SCTIE/MS and in partnership with PAHO in Brazil published its first Public Notice to support EVIP projects in order to select proposals to grant financial support for knowledge translation projects for evidence-informed policies with the purpose of strengthening SUS and integration between health research and decision-making. The Notice global value was BRL 400,000.00 (four hundred thousand Brazilian reais) from funds of the Cooperation Term no. 47 - MS/PAHO. Ten projects were recommended and eight had the contracting process completed upon agreement letter (Table 3). Each project received BRL 40,000.00 (forty thousand Brazilian reais) and the results expected included four products: 1) an evidence brief for health policy; 2) organization of a deliberative dialogue on health policies informed by the evidence briefs for policy referred to in the previous item and organized based on SUPPORT Tools; 3) preparation of a summary of deliberative dialogue on health policies developed based on SUPPORT Tools; and 4) local qualification for the use of SUPPORT Tools for evidence-informed policies, including at least twenty participants.

Table 3 - EVIPNet Public Notice Projects

Project Theme	Institution
Adequacy of prevention actions and control of arterial hypertension for the reality of the city of Angra dos Reis	National Institute of Cardiology (INC)
Early diagnosis of congenital cardiopathies through fetal morphological ultrasound and neonatal screening using the little heart test	National Institute of Cardiology (INC)
Improvement of care for people with sickle cell disease in the metropolitan region of São Paulo	Health Institute of São Paulo (IS/SES-SP)
Early childhood development	Health Institute of São Paulo (IS/SES-SP)
Implementation of the evidences core for health public policies at Fiocruz-BSB	Foundation for Health Scientific and Technological Development (FIOTEC)
Health impact assessment and its valuation in public expenditures due to air pollution in the state of São Paulo from 2006 to 2013 and review of mitigation measures from pollutant emissions	Health and Sustainability Institute (ISS)
Evidence-informed leprosy control program to strengthen SUS	Regional University of Cariri (URCA)
The effectiveness of interventions aimed at solving the problem of overcrowding of hospital emergency services	Health Institute of São Paulo (IS/SES-SP) and Cardiology Hospital (HCOR)

Source: Executive Secretariat of EVIPNet Brazil, Decit/SCTIE/MS

Development of knowledge translation products

Evidence briefs for Health Policies

The evidence briefs for health policies gather evidences of global and local researches to inform deliberations on health policies and programs including the description of a relevant public health problem, options informed by evidences to face the problem, implementation strategies and considerations on equity.

Themes to produce evidence briefs for policy are defined by the prioritization based on the real needs of local and national health systems; however, all levels of the health management system could benefit from the access to sources of information (transparency) and systematization of the decision-making process to favor the use of evidences in the articulation with contextual aspects such as social values, resources and other factors intrinsic to political decision-making.

Three evidence briefs for policy were finished and published during the analyzed period addressing perinatal mortality (2012[8] and 2013[9]) and promoting the use of scientific evidences on decision-making (2014[10]). Currently, two other evidence briefs are being developed by WG headquartered in the Brazilian Ministry of Health addressing the health judicialization in Brazil (DGTIS/SCTIE/MS) and adherence to drug treatment by patients with chronic diseases (DAF/SCTIE/MS). Four other evidence briefs are being developed by the NEv of the São Paulo Health Institute/SES/SP on mental health, diabetes, perinatal mortality and maternal mortality theme, and three evidence briefs are being developed

by the NEv of the National Cancer Institute (Inca) on themes of strategies for early detection of lip and cavity cancer, strategies for the early diagnosis of colorectal cancer and evaluation of communication strategies for the early detection of breast cancer. The Health and Sustainability Institute finished an evidence brief on the effects of air pollution on health in the state of São Paulo in March 2016. Details on this EVIPNet Brazil article are presented on Table 4.

Table 4 - Developmental Stage of Evidence Briefs for Policy

Subject of the evidence briefs for policy	Development Phase, March/2016	Institution in charge for the development
Perinatal Mortality	Published	Decit/SCTIE/MS [a]
Reducing perinatal mortality	Published	Decit/SCTIE/MS [a]
Stimulating the use of scientific evidence in decision-making	Published	Decit/SCTIE/MS [a]
Reduction of air pollution and consequent improvement of health in the state of São Paulo - SP	Under editorial process for publication	ISS[g]
Adherence to drug treatment by patients with chronic diseases	Under proofreading	DAF/SCTIE/MS [b]
Adequacy of prevention actions and control of arterial hypertension for the reality of the city of Angra dos Reis - RJ	Under proofreading	INC[d]
Early diagnosis of congenital cardiopathies through fetal morphological ultrasound and neonatal screening using the little heart test	Under proofreading	INC[d]
Strategies to address the health judicialization in Brazil	Under development	DGTIS/SCTIE/MS [c]
Strategies of care for people with tuberculosis in street situations	Under development	Fiocruz - DF[e]
Improvement of care for people with sickle cell disease in the metropolitan region of São Paulo - SP	Under development	IS/SES-SP[f]
Early childhood development	Under development	IS/SES-SP[f]
The effectiveness of interventions aimed at solving the problem of overcrowding of hospital emergency services	Under planning	IS/SES-SP[f]
Evidence-informed leprosy program to strengthen SUS	Under development	URCA[h]

Source: Executive Secretariat of EVIPNet Brazil, Decit/SCTIE/MS

[a] Department of Science and Technology/Secretariat of Science, Technology and Strategic Inputs/Brazilian Ministry of Health; [b] Department of Pharmaceutical Care / Secretariat of Science, Technology and Strategic Inputs / Brazilian Ministry of Health; [c] Department of Management of Health Technologies Incorporation of the Secretariat of Science, Technology and Strategic Inputs of the Brazilian Ministry of Health; [d] National Institute of Cardiology; [e] Oswaldo Cruz Foundation; [f] Health Institute of São Paulo Health State Secretariat; [g] Health and Sustainability Institute and h Regional University of Cariri.

Deliberative Dialogues for Health Policies

The next step after the production of evidence briefs for policy include organizing health policy dialogues, also called deliberative dialogues, which can be conducted at different levels - local or global - and with diverse audiences for the dissemination of key issues related to the theme of the previously developed evidence brief.

The deliberative dialogue allows an organizational and social discussion about the problem, options of policies and their implementation including political, academy, management and society representatives. It has the purpose of subsidizing the decision-making by articulating global evidences with visions, experiences and tacit knowledge of the interested parties with decisions related to the local problem and disseminates the best evidence to understand and face the problem. Piripiri NEv pioneered the conduction of local Deliberative Dialogues within EVIPNet and organized and held the dialogue on "Prevention and control of Dengue in the urban space"[12] in 2011.

At the national level, the Executive Secretariat of EVIPNet Brazil organized and held two national deliberative dialogues on the evidence brief "Reducing Perinatal Mortality" and "Stimulating the use of scientific evidence in decision-making". On February 2016, the Health and Sustainability Institute, in partnership with the Executive Secretariat of EVIPNet conducted the deliberative dialogue on the evidence brief for policy "Reducing the emission of atmospheric pollutants - particulate matter - in the urban environment for the benefit of health". The Institute's proposal was to develop a summary document with evidences of the atmospheric pollution impact on the health of the population.

Articles published

In addition to the institutional activities of EVIPNet Brazil, at least five articles on the topic of EIPM were published and developed within the network between 2012 and 2015, in four different journals in the health area (Table 5).

Table 5 - Articles Published

Title	Periodic
Course 'Use of evidences in health municipal management': a pioneer experience	Revista Brasileira de Medicina de Família e Comunidade, v. 7, n. 23, p. 122-126, 2012.
Making progress on the use of evidence-informed health policies and practices: Piripiri-Piauí experience	Ciência e Saúde Coletiva, v. 18, n. 1, p. 25-34, 2013.[a]
Current development of the Evidence-Informed Policies Network (EVIPNet Brazil): case report	Revista Panamericana de Salud Pública, v. 36, n. 1, p. 51, 2014.[b]
Frontiers of the autonomy of local health management: innovation, creativity and evidence-informed decision-making	Ciência e Saúde Coletiva, v. 19, n. 11, p. 4427-4438, 2014.[c]
Strategies to encourage the use of scientific evidence in decision-making	Cadernos Saúde Coletiva, v. 23, n. 3, p. 316-322, 2015.[d]

Source: Executive Secretariat of EVIPNet Brazil, Decit/SCTIE/MS

Number of accesses to the article in SciELO portal: [a]1.841; [b]1.226; [c]819 and [d]218.

Promotion and dissemination activities

EVIPNet Brazil Portal and Social Networks

EVIPNet Brazil has a portal (http://brasil.evipnet.org) to disclose collaborative works along with the members of the network. EVIPNet portal has contents on the network's institutional description and the Advisory Council; annual reports; news of activities developed by the network; links for the methodology: a digital version of SUPPORT Tools, articles on SUPPORT Tools at BVS and online course on evidence-informed policies; links for the digital versions of evidence briefs for policy published; links for health indicators of several sources (DataSUS, IDSUS, SVS/Aids, SAGE and PAHO); links for research of evidences of several sources (REBRATS, BVS, Health Evidence, Health Systems Evidence and Rx for Change); agenda of EVIPNet Brazil activities; content of workshops and qualifications; participations in events; minutes of meetings; links for videos of interviews conducted by EVIPNet Brazil; links for social networks and localization, contact and information of Evidence Centers In addition, the network has other communication channels of Facebook, YouTube, Linkedin, Twitter, Instagram and Flickr. The Facebook page had 681 likes until the time of this study, out of which 71% women and 29% men in 14 different countries with an average of 300 views per post and 2,385 visits to the page over the last 30 days (data from 03/15/2016). Twitter has 44 followers. There are 1,412 photos published on Flickr with 461 views, 3 photos published on Instagram and 5 followers, 11 contacts on Linkedin and 90 videos available on the YouTube channel with 2,237 views.

Congresses and Conferences

Different promotion and dissemination activities are developed by EVIPNet Brazil in order to widely promote and disclose the network along with different audiences (decision-makers and their supporters, health professionals, researchers and members of the organized civil society), in addition to contribute to the dissemination and knowledge translation processes. Thus, the Executive Secretariat of EVIPNet supports the participation of its representatives in national and international congresses and conferences in order to deliver lectures, participate in round tables and other presentation forms, including verbal works and posters (Table 6).

An advanced course for librarians was held in São Paulo, on February 2016, in partnership with Bireme/PAHO. Considering the reinforcement, expansion and integration between EVIPNet and Bireme/PAHO, this workshop represented an additional positive landmark by qualifying librarians part of the Working Groups and Evidence Centers of the network in order to facilitate the search and access to databases, as well as the critical assessment to choose (include or exclude) studies to identify evidences focused on supporting health decision-making. A group of librarians of EVIPNet Brazil was created on Facebook as a result of this workshop to exchange information and experiences (https://www.facebook.com/groups/592797897595029/).

Table 6 – Participation of the EVIPNet Brazil in Events

1. National Congresses of Municipal Health Secretariats - Conasems - (Gramado/RS, 2010; Brasília/DF, 2011; Maceió/AL, 2012; Brasília/DF, 2013; Serra/ES, 2014; Brasília/DF, 2015).
2. 10th Brazilian Health Congress, Culture of Peace and Non-Violence through the organization of round table "Communication for health political decision" (Brasília/DF, 2013).
3. 2nd Brazilian Policy, Planning and Health Management Congress: Universality, Equality and Integrality of Health: A possible project" through the organization o the workshop "EVIPNet Brazil: Evidence-Informed Policy" (Belo Horizonte/MG, 2013).
4. Conference to celebrate the 15 years of SciELO Network (São Paulo/SP, 2013).
5. 13th National Show of Successful Experiences in Epidemiology, Prevention and Control of Diseases (EXPOEPI, Brasília/DF, 2013).
6. Brazilian Seminar on Quaternary Prevention in Primary Health Care (Curitiba/PR, 2013)
7. Science, Technology and Innovation in SUS: Integration between Scientific Knowledge and Health Policies with the organization of the panel "Opportunities for health management: evidences for decision-making" (Brasília, 2013).
8. Seminar "Scientific Evidence in health policies" promoted by the Public Health School of Minas Gerais (Belo Horizonte, 2013).
9. Meeting of the Advisory Council (Brasília, 2013).
10. 12th WONCA World Conference on Rural Health and 4th South-Brazilian Congress on Family and Community Medicine (Gramado/RS, 2014).
11. 13th International Conference on Science and Technology Public Communication, disclosing the methodology by presenting the work "Using deliberative dialogue to translate scientific evidence: the Evidence-Informed Policy Network Brazil's case" (Salvador/BA, 2014).
12. Organization of the international seminar "Scientific Evidences for health policies and programs decision-making" conducted in partnership with the Brazilian Network of Technologies Assessment (Rebrats) and Oswaldo Cruz Foundation (Fiocruz) (Brasília/DF, 2014).
13. Reception of technical visit of members of the Centro Nacional de Excelencia Tecnológica en Salud (Cenetc) of Mexico City (Brasília/DF, 2014).
14. Participation in the "Meeting of EVIPNet Global Steering Committee" and "World Health Organization Workplace Workshop" (Geneva/Switzerland, 2014).
15. Disclosure and participation in EVIPNet Brazil's event "Science, Technology and Innovation in Health: results and progresses of strategic researches for SUS". At the time, the first online course on Evidence-Informed Policies was launched (Brasília/DF, 2014).
16. Annual Meeting of the International Conference on Health Technology Assessment (HTAi) with the panels: "EVIPNet Brazil and the experience of the Evidence Centers" and "How to enhance the use of evidence in decision-making? Evidence-informed options for health policies" (Washington/DC, 2014).
17. Annual Meeting of the International Health Technology Assessment Conference (HTAi) with the panels: "The knowledge translation process and the EVIPNet Brazil"; "Cost effectiveness analysis of TAVI compared to standard treatment of symptomatic aortic stenosis in patients at high surgical risk" and "Health Economic Assessment in the MERCOSUR: Strategic Actions and Cooperation to Produce and Exchange Scientific Knowledge" (Oslo/Norway, 2015).

18. 1st Colloquium of Analysis of Applied Networks and Technological Prospecting, Fiocruz (Brasília/DF, 2015).
19. 1st North and Northeast Evidence-Based Health Congress, Cariri Convention Center (Crato/CE 2015).
20. 1st North Evidence-Based Health Congress of the Northern Region (Sobral/CE, 2015).
21. Participation in Research SUS - 1st Scientific meeting of researches applied to health public policies, Fiocruz (Brasília/DF, 2015).
22. 1st Pernambuco Forum for evaluation of health technologies (Recife/PE, 2015).
23. Seminar on Health Technologies and Innovation Assessment in SUS: challenges and proposals for management (São Paulo/SP, 2015).

Source: Executive Secretariat of EVIPNet Brazil, Decit/SCTIE/MS

Next steps

The continuity of the following activities of EVIPNet Brazil is expected for 2016: on-site qualification to apply SUPPORT Tools; Online Introduction Course on EIPM (3rd edition); Introduction Course on the Use of Economic Assessment Studies at EIPM Advanced course for Librarians focused on searching and recovering evidences to subsidize health decision-making processes; workshops for the preparation of evidence briefs for health policies; technical meetings for awareness-raising, qualification and training of new working groups; Deliberative Dialogues on Health Policies based on evidence briefs being developed by working groups of the network; disclosure of EVIPNet in scientific and health management events; launching of the second Public Notice to support the creation of new Evidences Cores and Working Groups; publishing of evidence briefs; publishing of scientific articles and at least two meetings of the Advisory Council.

Final considerations

Results showed the sustained growth of EVIPNet Brazil activities and suggest that the network is under process of consolidating itself as a knowledge translation platform in Brazil. The investment in qualification activities at different complexity levels calls the attention, as well as the expansion of the network's collaborating groups in the country, where the different institutional profiles involved are highlighted.

The monitoring and assessment of EVIPNet Brazil results will be necessary to identify the impacts of the initiative on the decision-making of health policies preparation and implementation in Brazil. EVIPNet Brazil's experience should be further investigated in order to produce subsidies to support the progress of knowledge translation platforms and consolidate EIPM globally.

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References

1. Armstrong R, Waters E, Dobbins M, Anderson L, Moore L, Petticrew M, et al. Knowledge translation strategies to

improve the use of evidence in public health decision making in local government: intervention design and implementation plan. Implementation Science. 2013; 8; 121.

2. Carter R, Vos T, Moodie M, Haby M, Magnus A, Mihalopoulos C. Priority setting in health: origins, description and application of the Australian Assessing Cost-Effectiveness initiative. Expert Review of Pharmacoeconomics & Outcomes Research. 2008; 8: 593-617.

3. Graham ID, Logan J, Harrison MB, Straus SE, Tetroe J, Caswell W, et al. Lost in knowledge translation: time for a map? Journal of Continuing Education in the Health Professions. 2006; 26:13-24.

4. Lavis JN, Oxman AD, Lewin S, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP). Health Research Policy and Systems. 2009;7; Suppl 1; 11.

5. Ministério da Saúde. Portaria nº 2.636/GM/MS, de 7 de outubro de 2009. Institui e define atribuições do Conselho Consultivo da EVIPNet Brasil. Diário Oficial da União. 8 out 2009; Seção 1:90.

6. Ministério da Saúde. Portaria nº 2.001/GM/MS, de 12 de setembro de 2013. Institui e define atribuições do Conselho Consultivo da EVIPNet Brasil. Diário Oficial da União. 13 set 2013; Seção 1:63.

7. Ministério da Saúde. Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Ferramenta SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP): uma coletânea de artigos publicados na revista 'Health Research Policy and Systems'. Brasília (DF); 2010. [visited on March 14, 2016]. Available at: http://sintese.evipnet.net/livro/

8. Ministério da Saúde. Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Síntese de Evidências para políticas de saúde: mortalidade perinatal. Brasília (DF); 2012. [visited on March 14, 2016]. Available at: http://cms.evipnet.org/wp-content/uploads/2015/10/Si%CC%81ntese-Mortalidade-perinatal_FINAL1.pdf

9. Ministério da Saúde. Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Síntese de Evidências para políticas de saúde: reduzindo a mortalidade perinatal. Brasília (DF); 2013. [visited on March 14, 2016]. Available at: http://brasil.evipnet.org/wp-content/uploads/2016/03/Reduzindo-a-mortalidade-perinatal-WEB.pdf

10. Ministério da Saúde. Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Síntese de Evidências para políticas de saúde: estimulando o uso de evidências científicas na tomada de decisão. Brasília (DF); 2013. [visited on March 14, 2016]. Available at: http://cms.evipnet.org/wp-content/uploads/2014/12/WEB-S%C3%ADntese-tomada-de-Decis%C3%A3o.pdf

11. Oxman AD, Lavis JN, Lewin S, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP) 1: What is evidence-informed policymaking? Health Research Policy and Systems. 2009; 7; Suppl 1; S1.

12. Secretaria Municipal de Piripiri. Reporte de diálogo deliberativo síntese de evidências nº 01/2011: prevenção e controle da dengue no espaço urbano. 2011. [visited on March 15, 2016] Available at: http://cms.evipnet.org/wp-content/uploads/2013/01/Di%C3%A1logo_Deliberativo_Dengue_NEv_Piripiri_2012_12_10.pdf

13. WHO – World Health Organization. Resolutions and other actions of the 58th world health assembly of interest to the PAHO Executive Committee. Genebra; 2005. [visited on March 7, 2016]. Available at: http://www.paho.org/english/gov/ce/ce136-25-e.pdf

14. WHO – World Health Organization. Bridging the "Know–Do" Gap. In: Meeting on Knowledge Translation in Global Health; 2005 Oct 10–12; Genebra: WHO; 2006. [visited on March 7, 2016]. Available at: http://www.who.int/kms/WHO_EIP_KMS_2006_2.pdf

Rapid response for evidence-informed health policy

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Abstract

It is widely accepted that health interventions underpinned by research evidence will be more effective than those that are not. However, in health policy making, with its non-linear decision making processes and competing political drivers, the use of research evidence to inform decisions is not straightforward. Often cited barriers include limited access to high quality research and poor relevance and timeliness of research; whilst improved collaboration and relationships between academics and decision makers have been cited as important facilitators of the use of research evidence.

Rapid response programs have been initiated in order to overcome these barriers. They seek to facilitate the use of research evidence by ensuring timely and relevant provision of research and through close working relationships between researchers and decision makers. A program typically works to provide synthesized research evidence in a short timeframe. Rapid reviews of the literature are key products. At present there is wide variation in how such products are developed and little empirical evidence on how shortcuts in the review process might impact on review findings.

Whilst rapid response programs and their products are potentially an important mechanism for supporting evidence-informed health policy decisions, these strategies need to be tested empirically.

Keywords: Rapid review; rapid response; evidence-informed policy

Introduction

Health interventions underpinned by research evidence are more likely to be effective than those that are not. They are also expected to offer better value for money, greater transparency in decision making and greater accountability.[8] Evidence from research can help to ensure that no harm will come from the implementation of an intervention; that the intervention will be effective in achieving its intended outcomes; that the intervention will not increase health inequalities; and will maximize the use of available resources.[8]

In relation to clinical care it is widely accepted that decisions by health professionals should be based on the best available research evidence as well as clinical expertise.[29] This concept has been labelled evidence-based medicine or evidence-based practice and has become an important part of the training of new health professionals. For decisions about patient care, the best available evidence is usually systematic reviews of randomized controlled trials. The Cochrane Collaboration, started by Archie Cochrane in 1992 (http://www.cochrane.org/), is the most well-known producer of these systematic reviews, and these are also used as a basis for a range of products, including clinical practice guidelines and health technology assessments.

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When it comes to the use of evidence in decisions relating to health policy the field has a shorter history and is less well-developed. Policy decision making is also much more complicated, partly due to the non-linear nature of policy making[5] and the need to consider a range of factors when making policy decisions – such as context, acceptability to stakeholders and feasibility of implementation.[5,7,12] This field is generally labelled evidence-informed policy or evidence-informed decision making.

While systematic reviews and related products (e.g. health technology assessments and evidence briefs for policy) are also important for decision-making in relation to health policy, attention has recently focused on the need to make these products available in a much shorter period of time. As such, various producers of systematic reviews and related products have begun to utilize methods for rapid reviews of the research evidence. Further, both producers and users of systematic reviews have begun setting up rapid response programs to respond to the needs of decision-makers for rapid access to the best available evidence. One well-known example of such a program in the Americas Region is the McMaster Health Forum Rapid Response Program in Canada (www.mcmasterhealthforum.org/policymakers/rapid-response-program). The main product or products of rapid response programs vary but generally take the form of 'rapid reviews', which can be thought of as a variation of a systematic review and is conducted in a shortened timeframe.[13]

In this paper we explain why decision-making in relation to health policy is different to practice and how the use of research evidence in policy-making can be facilitated. We then present what is currently known about rapid response programs and rapid reviews.

Decision-making in relation to health policy

Policy making is typically messy. While the health policy literature offers 'ideal' models or theories to explain the policy making process that are usually linear or cyclical,[2] these rarely apply in practice.[5] The reality is that policy decisions are more likely to be driven by opportunities, relationships and other influences rather than an explicit and logical process.[10] One well known theory for the policy process is offered by the political scientist John Kingdon[5,9,19] According to Kingdon, agenda setting is the first stage in the policy process. The policy agenda is the list of issues or problems to which government officials, or those who make policy decisions (including the voting public), pay serious attention. Moving an idea onto or higher up on that agenda involves three processes (or streams): problems, proposals, and politics. Policy windows or opportunities only open when all three streams converge.[9] Thus, to move an issue onto the policy agenda requires, for example, that when a problem is identified and there is political will to solve the problem, the policy proposal (or solution) can be quickly offered. Timely research evidence is particularly important here to ensure that the best available evidence is used in the policy proposal. If the research evidence is not available when needed it is more likely that the policy solution will be based on historical experience or lobbying from vested interests. Research evidence is also important for identifying problems so that political attention can be focused on them and solutions (policy proposals) found. The likelihood of successful agenda setting substantially increases if all three elements—problem, proposal, and politics—are linked in a single package.[9]

Policy decisions are also made at various levels. Some scholars categorize policy as ''big P '' policies (e.g. formal laws, rules, and regulations enacted by elected officials) and ''small p'' policies

(e.g. organizational guidelines, internal agency decisions or memoranda, and social norms guiding behavior).[3,30] Both types of policy ("big P" and "little p") can have a significant impact on the health of populations and are important in evidence-informed health policy.

Facilitating the use of research evidence for policy

There is a growing literature describing the barriers and facilitators to the use of research evidence for health policy.[20,22,24-26] The most frequently reported barriers to evidence uptake are poor access to good quality relevant research, and lack of timely and relevant research output.[25,37] The most frequently reported facilitators are collaboration between researchers and policymakers, improved relationships and skills,[25] and research that accords with the beliefs, values, interests or practical goals and strategies of decision makers.[21] Rapid response programs are a strategy designed to overcome the barriers of timeliness, quality and relevance of the research evidence. They can also act as facilitators to research use as they often include a close working relationship between researchers and decision makers to ensure that the finished product meets the decision-makers' needs.[17] However, the effectiveness of rapid response programs in improving the use of research evidence in health policy decision making has not been tested.[14]

Rapid response programs

While there is no formal definition available in the literature, a rapid response program can be thought of as an organized effort by government, academic and/or independent organizations to make the best available research evidence available to policy decision-makers in a shortened timeframe. To describe rapid response programs consideration needs to be given to: 1) the product offered; 2) the strategies utilized to facilitate the uptake of the product into decision-making; and 3) how the program is operationalized to ensure that it runs smoothly.[14] These three things together will determine if the rapid response program meets its intended purpose, which is to facilitate the use of high quality research in health decision-making.

Current reviews of rapid response programs suggest that one of the defining features in the creation of the products offered by rapid response programs (e.g. rapid reviews) is the close relationship with the end user.[16] We hypothesize that this is likely to increase the use of the reviews in policy decision making as it is known that personal contact between researchers and decision makers is a facilitator of the uptake of evidence.[18,20,25] Further, the process of conducting rapid reviews is also likely to build skills and trust between researchers and decision makers, both of which are facilitators of the uptake of evidence.[18,25]

The number of programs offering rapid response services is increasing.[16,28] Authors of a recent study surveyed 29 rapid response programs internationally.[28] Within, and across, these programs there was a wide variation in the program objectives, types of questions answered, and processes and methods used.[28] However, none of the rapid response programs surveyed were from Central or South America. This may have been due to language barriers or because such programs don't yet formally exist in this region.

Rapid reviews

The types of products produced by rapid response programs are widely varied.[17,28] We

focus here on products that include a synthesis of the evidence because this is the most widely researched product, most comparable to a standard systematic review (the gold standard) and because we consider it to be the most useful for increasing the use of the best available research in health decision making. This type of rapid product has many names, including rapid review, evidence summary, brief review, rapid systematic review, and rapid health technology assessment. In this paper we use the term 'rapid review' as it is the most widely used term in the published literature.[32,33]

A rapid review can be defined as "a type of systematic review in which components of the systematic review process are simplified, omitted or made more efficient in order to produce information in a shorter period of time, preferably with minimal impact on quality. Further, rapid reviews involve a close relationship with the end-user and are conducted with the needs of the decision-maker in mind".[15] Systematic reviews of rapid review methods show that there is significant variety in the methodological approaches or 'shortcuts' used in rapid reviews to make them faster than a full systematic review.[1,11,16,32] Shortcuts taken can also vary within programs, which could be partly due to the preferences of the decision makers and their timelines, but can include: limiting the number of questions; limiting the scope of questions; searching fewer databases; limited use of grey literature; restricting the types of studies included (e.g. English only, most recent 5 years); relying on existing systematic reviews; eliminating or limiting hand searching of reference lists and relevant journals; narrow time frame for article retrieval; using non-iterative search strategy; eliminating consultation with experts; limiting full-text review; limiting dual review for study selection, data extraction and/or quality assessment; limiting data extraction; limiting risk of bias assessment or grading; minimal evidence synthesis; providing minimal conclusions or recommendations; and limiting external peer review. [1,11,16,32]

While a wide range of 'shortcuts' are used to make rapid reviews faster than a full systematic review, there is little empirical evidence of the impact of these shortcuts on the conclusions of either rapid reviews or systematic reviews.[15] Further, there are few comparisons of full and rapid reviews that are available in the literature to be able to determine the impact of the shortcut on the conclusions of the reviews.[15,34,35] However, producers and users of rapid reviews need to be aware that the choice of 'shortcuts' taken for the review will impact on the perceived methodological quality of the review, as assessed by the user[33], as well as by available systematic review quality assessment tools.[31] Whatever the methods chosen to conduct rapid reviews, authors of systematic reviews of rapid review methods have argued for both users and producers of rapid reviews to increase the transparency of the methods used for each review so that their methodological quality can be assessed.[6,11,36]

While there is also potential for evidence briefs for policy to be conducted quickly as part of a rapid response program the evidence base or practical experience to support this product is limited. However, rapid reviews produced as part of a rapid response program could be used to inform evidence briefs for policy.

Conclusions

Rapid response programs and their products is a rapidly expanding area of interest and research[27] and there is considerable investment in their implementation. But there is still a great deal of work to be done to ensure (and measure

empirically) that they meet their goal, which is to increase the use of high quality research evidence in policy making,[14] and can therefore be considered a good investment of resources. One of their greatest achievements is likely to be a closer working relationship between researchers and policy makers and a small move away from the "two communities" model of research and policy,[4,5] to one where researchers and policy-makers work together to obtain a better understanding of each other's world[23] and better decision making.

References

1. Abrami PC, Borokhovski E, Bernard RM, Wade CA, Tamim R, Persson T, et al. Issues in conducting and disseminating brief reviews of evidence. Evidence & Policy: A Journal of Research, Debate & Practice. 2010;6:371-89.

2. Bridgman P, Davis G. The Australian Policy Handbook. New South Wales, Australia: Allen & Unwin; 2004.

3. Brownson RC, Chriqui JF, Stamatakis KA. Understanding evidence-based public health policy. American Journal of Public Health. 2009[access 28 mar 2016];99:1576-83. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2724448/pdf/1576.pdf

4. Brownson RC, Royer C, Ewing R, McBride TD. Researchers and policymakers: travelers in parallel universes. American Journal of Preventive Medicine. 2006[access 28 mar 2016];30:164-72Available at: https://www.researchgate.net/publication/7315475_Researchers_and_Policymakers_Travelers_in_Parallel_Universes

5. Buse K, Mays N, Walt G. Making health policy.2.ed. Berkshire: Open University: McGraw-Hill; 2012.

6. Cameron A, Watt A, Lathlean T, Sturm L. Rapid review versus full systematic reviews: an inventory of current methods and practice in Health Technology Assessment. (ASERNIP-S Report , 60). Adelaide, South Australia: ASERNIP-S; 2007.

7. Carter R, Vos T, Moodie M, Haby M, Magnus A, Mihalopoulos C. Priority setting in health: origins, description and application of the Australian Assessing Cost-Effectiveness initiative. Expert Review of Pharmacoeconomics & Outcomes Research. 2008;8:593-617.

8. Clark R, Haby M. Evidence-based policy: why and how. In: Carey G, Landvogt K, Barraket J, editors. Creating and implementing public policy: cross-sectoral debates. Routledge, Taylor and Francis Group. London: Policy Press; 2015. chap.7.

9. Coffman J. Evaluation based on theories of the policy process. The Evaluation Exchange. 2007[access 28 mar 2016];13:6-7. Available at: http://www.hfrp.org/var/hfrp/storage/original/application/6bdf92c3d7e970e7270588109e23b678.pdf

10. Colebatch HK. Policy. 2.ed. Buckingham: Open University ; 2002.

11. Ganann R, Ciliska D, Thomas H. Expediting systematic reviews: methods and implications of rapid reviews. Implementation Science. 2010[access 28 mar 2016];5:56. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2914085/ pdf/1748-5908-5-56.pdf

12. Haby M, Bowen S. Making decisions about interventions. A guide for evidence-informed policy and practice. Melbourne: Prevention and Population Health Branch; 2010.[access 28 mar 2016] Available at: https://www2.health.vic.gov.au/public-health/population-health-systems/evidence-and-evaluation/guidelines-on-evidence-and-evaluation

13. Haby M, Chapman E, Clark R, Barreto J, Reveiz L, Lavis JN. What are the best methodologies for rapid reviews of the research evidence for evidence-informed decision making in health policy and practice: a rapid overview. Implementation Science. 2015; (submitted December).

14. Haby MM, Chapman E, Clark R, Barreto J, Reveiz L, Lavis JN. Designing a rapid response program to support evidence-informed decision making in the Americas Region: using the best available evidence and case studies. Implementation Science. 2016; (submitted Jan 2016).

15. Haby MM, Chapman E, Clark R, Barreto J, Reveiz L, Lavis JN. What are the best methodologies for rapid reviews of the research evidence for evidence-informed decision making in health policy and practice: a rapid review. Implementation Science. 2016; (submitted Jan 2016).

16. Agency for Healthcare Research and Quality. EPC methods: an exploration of methods and context for the production of rapid reviews: research white paper. (AHRQ Publication,15-EHC008-EF). Rockville (MD); 2015. [access 28 mar 2016] Available at: www.effectivehealthcare.ahrq.gov/reports/final.cfm.

17. Hartling L, Guise JM, Kato E, Anderson J, Belinson S, Berliner E, et al. A taxonomy of rapid reviews links report types and methods to specific decision-making contexts. Journal of Clinical Epidemiology. 2015. [access 28 mar 2016] Available at: http://www.jclinepi.com/article/S0895-4356%2815%2900372-8/pdf

18. Innvaer S, Vist G, Trommald M, Oxman A. Health policy-makers' perceptions of their use of evidence: a systematic review. Journal of Health Services Research & Policy. 2002;7:239-44.

19. Kingdon J. Agendas, alternatives and public policies. 2.ed. Harlow: Longman Classics; 2010.

20. Lavis J, Davies H, Oxman A, Denis JL, Golden-Biddle K, Ferlie E. Towards systematic reviews that inform health care management and policy-making. Journal of Health Services Research and Policy. 2005;10 Suppl 1:35-48.

21. Lavis JN, Hammill AC, Gildiner A, McDonagh RJ, Wilson MG, Ross SE, et al. A systematic review of the factors that influence the use of research evidence by public policymakers: final report submitted to the Canadian Population Health Initiative. Hamilton, Canada: McMaster University Program in Policy Decision-Making; 2005.

22. Liverani M, Hawkins B, Parkhurst JO. Political and institutional influences on the use of evidence in public health policy. A systematic review. PLoS One. 2013. [access 28 mar 2016];8:e77404. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3813708/pdf/pone.0077404.pdf

23. Moodie R. Where different worlds collide: expanding the influence of research and researchers on policy. Journal of Public Health Policy. 2009. [access 28 mar 2016];30(Suppl 1):S33-S7. Available at: http://www.palgrave-journals.com/jphp/journal/v30/nS1/pdf/jphp200853a.pdf

24. Nutley S. Bridging the policy/research divide. Reflections and lessons from the UK. In: Facing the Future: Engaging stakeholders and citizens in developing public policy. National Institute of Governance Conference; 2003 April 23-24; Canberra, Australia; 2003. [access 28 mar 2016] . Available at: http://www.treasury.govt.nz/publications/media-speeches/guestlectures/nutley-apr03. 2003.

25. Oliver K, Innvar S, Lorenc T, Woodman J, Thomas J. A systematic review of barriers to and facilitators of the use of evidence by policymakers. BMC Health Services Research. 2014. [access 28 mar 2016];14:2. Available at: http://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-14-2

26. Orton L, Lloyd-Williams F, Taylor-Robinson D, O'Flaherty M, Capewell S. The use of research evidence in public health decision making processes: systematic review. PLoS One. 2011. [access 28 mar 2016];6:e21704. Available at: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0021704

27. Polisena J, Garritty C, Umscheid CA, Kamel C, Samra K, Smith J, et al. Rapid Review Summit: an overview and initiation of a research agenda. Systematic Reviews. 2015. [access 28 mar 2016];4:111. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4583747/pdf/13643_2015_Article_111.pdf

28. Polisena J, Garrity C, Kamel C, Stevens A, Abou-Setta AM. Rapid review programs to support health care and policy decision making: a descriptive analysis of processes and methods. Systematic Reviews. 2015. [access 28 mar 2016];4:26. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4407715/pdf/13643_2015_Article_22.pdf

29. Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. BMJ. 1996. [access 28 mar 2016];312:71-2. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2349778/pdf/bmj00524-0009.pdf

30. Seavey J, McGrath R, Aytur S. Health policy analysis: framework and tools for success. New York, NY: Springer; 2014.

31. Shea BJ, Hamel C, Wells GA, Bouter LM, Kristjansson E, Grimshaw J, et al. AMSTAR is a reliable and valid measurement tool to assess the methodological quality of systematic reviews. Journal of Clinical Epidemiology. 2009;62:1013-20.

32. Tricco AC, Antony J, Zarin W, Strifler L, Ghassemi M, Ivory J, et al. A scoping review of rapid review methods. BMC Medicine. 2015[access 28 mar 2016];13:224. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4574114/pdf/12916_2015_Article_465.pdf

33. Tricco AC, Zarin W, Antony J, Hutton B, Moher D, Sherifali D, et al. An international survey and modified Delphi approach revealed numerous rapid review methods. Journal of Clinical Epidemiology. 2016;70:61-67.

34. Van de Velde S, De Buck E, Dieltjens T, Aertgeerts B. Medicinal use of potato-derived products: conclusions of a rapid versus full systematic review. Phytotherapy Research. 2011;25:787-8.

35. Watt A, Cameron A, Sturm L, Lathlean T, Babidge W, Blamey S, et al. Rapid versus full systematic reviews: validity

in clinical practice? Australian and New Zealand Journal of Surgery. 2008;78:1037-40.

36. Watt A, Cameron A, Sturm L, Lathlean T, Babidge W, Blamey S, et al. Rapid reviews versus full systematic reviews: an inventory of current methods and practice in health technology assessment. International Journal of Technology Assessment in Health Care. 2008;24:133-9.

37. WHO- World Health Organization. Knowledge translation framework for ageing and health. Geneva: Department of Ageing and Life-Course;2012. [access 28 mar 2016] Available at: http://www.who.int/ageing/publications/knowledge_translation.pdf?ua=1

Methodological approach in EVIPNet Brazil: SUPPORT Tools for evidence-informed health policy making

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Abstract

We present the main points of SUPPORT (Supporting Policy Relevant Reviews and Trials) Tools for evidence-informed health policy making. SUPPORT Tools was presented in a series of articles published in 2009 in journal Health Research Policy and Systems. The series of 18 articles were translated into Portuguese and is available on the Internet. The SUPPORT Tools are very useful for teams in rigorous production of knowledge translation products on options to address a particular health problem, known as evidence brief for policy. EVIPNet Brazil adopts the SUPPORT Tools as main reference of methods for develop its institutional activities.

Keywords: Health Policy, Evidence-informed policy making, Evidence brief for policy

Efficient, strictly methodological, transparent, innovative and responsible work before SUS, developed by collaborative teams with multiple social players are one of EVIPNet Brazil values. Concretizing such values require the adoption of methods that promote the inclusion of scientific evidences as subsidy for decision-making to prepare and implement public policies in a balanced, systematic and transparent way in the face of decision-makers, researchers and citizens in general. SUPPORT Tools (Supporting Policy Relevant Reviews and Trials) for the preparation of evidence-informed health policies comprise this scope and are the main methodological reference of EVIPNet Brazil.

This text briefly presents the main elements of SUPPORT Tools as a way of promoting its dissemination among audiences potentially interested in supporting the use of scientific evidences to improve health results.

What are SUPPORT Tools for evidence-informed health policies?

SUPPORT Tools were presented in a set of articles published in 2009 on the Health Research Policy and Systems magazine. These papers were prepared within the international project scope which included researchers from institutions leading the study of health policies evidences use. Such tools are especially targeted to decision-makers, policy-makers and their supporters, and were prepared for use in different scenarios, including high, medium and low income countries.

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They are very useful for teams wishing to collaborate, with utmost rigor, knowledge translation products on options for addressing a particular health problem, these documents are known as Evidence Brief for Health Policy. An evidence brief for policy has the following characteristics: 1) describe a health problem defined as of high priority and its context; 2) describe what is known are this problem, the costs and consequences of the options to face the problem and key aspects to implement the options; 3) inform the methods employed to identify, solve and analyze literature data, which should be systematic and transparent; 4) make considerations about the quality of selected studies, applicability of results to the local context, and equity regarding each option identified to deal with the problem; 5) have a presentation format, size and language that make reading easy by the stakeholders; 6) contain information about a review of merit from the point of view of the methodological quality and relevance of the analyzed problem.[8]

The series of 18 articles was translated into Portuguese and is available online on EVIPNet Brasil portal (http://sintese.evipnet.net/livro/) under the title "Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências: uma coletânea de artigos publicados na revista *Health Research Policy and Systems*". However, it is now considered more appropriate to speak of evidence-informed policies, since the briefs produced are intended to inform decision-makers about policy options that can better respond to a particular health problem without making recommendations.

Each article has methods that can be used by the people involved in supporting the decision-making process, for the search, identification and application of results presented by the scientific research when preparing and implementing evidence-informed health policies. The tools are addressed to four interest areas related to policy formulation: 1) institutional support for the preparation of evidence-informed policies; 2) identification of research evidence needs in all three steps of policies formulation processes, that is, problem clarification, options structuring and implementation planning; 3) identification and evaluation of evidences to be provided in each step; and 4) transition from the research evidence phase to the decision phase.[5]

Contents for each article of the SUPPORT Tools series will be briefly presented here with methods focused on qualifying the health policies decision-making process by including the best scientific evidences available.

How do SUPPORT Tools help to explicit the problem to be faced?

The steps developed with the support of these tools start with the exploration of the problem to be faced. Before anything, the problem should be elucidated so that its limits are explicitly recognized. In the first step, the matters to be elucidated include the problem definition itself, but also how this problem became relevant, which indicators could be used to measure its size and monitor its progress, and how the problem could be structured so as to encourage different groups to discuss it according to its interests and values.[5]

Article 1 of the series discusses the importance of defining the understanding of evidence, once it can have several implications. Evidence is generally related to real or declared facts known through experience or observation. However, not all evidences are equally as consistent, and research evidences tend to be more consistent for having the use of systematic methods as basis.[15] Proposals to help improving the institutional support

process to the use of research evidence as a basis for decisions related to health policies are presented on article 2.[19] Criteria and processes o define priorities, communication strategy and follow-up plan are aspects addressed on article 3. Attention to these aspects are important even in places with limited resources, once they enable the decision about resources allocation in policies that generate greater impact.[6] Defining the problem is decisive for the next steps of preparation of an evidence brief for policy. Failure in the problem clarification process may lead to investment of time and resources in the formulation of poorly informed choices to guide the decision-making. Article 4 includes the discussion of the use of indicators and comparative data that help enriching information based on local data.[9]

How do SUPPORT Tools help to identify options to face the problem?

The goal to be achieved in this step involves identifying options for dealing with the problem. Such options are identified from the structure search with repositories and indexed databases in order to find a specific type of study, systematic reviews. Systematic reviews present the consolidation of global quantitative and qualitative researches about one or more issues defined *a priori* for a determined goal. These researches are selected from a comprehensive search and follow previously set inclusion and exclusion parameters.[4] Systematic reviews are widely accepted as the most reliable sources sources of evidences on health intervention effects and are increasingly used to identify, assess and combine evidences about interventions effects in their clinical, economic aspects, or in health services and systems. Its systematic and explicit approach reduces the risk of bias and facilitates the critical evaluation of these summaries.

The identification of options and the judgment on potential effectiveness to address relevant public health problems requires a systematic and transparent process of searching and analyzing scientific evidence presented in systematic reviews, which will help to determine essential aspects for the use of this knowledge as a subsidy of decision-making, especially regarding the feasibility, adaptability and acceptability of options based on the effects (benefits, risks and uncertainties) and costs mentioned.[10]

Once systematic reviews addressing potential options for facing the problem are identified, these studies will be assessed upon the application of assessment instrument of its methodological quality in order to ensure the use of good quality reviews or, if not, the recognition of studies with methodological weaknesses. Articles 7 and 8 address the identification of systematic reviews and assessment of the methodological quality of these reviews.[4,12]

After identifying the options with potential effectiveness on the problem and assessing the methodological quality of the selected studies, the following step consists in analyzing the relevant aspects of the options chosen. Elements of options are considered in this step, such as the magnitude of the potential benefits and losses provided by the options to those involved and/or affected by their implementation; local costs of each option, its feasibility and sustainability, as well as the cost-benefit ratio; adaptations needed for options to increase benefits and reduce risks and costs in the context of their implementation, and finally the opinions and experiences of the people involved in the implementation of the option and how these may affect their acceptance and effectiveness. Articles 9, 11 and 12 discuss these aspects.[7,11,13]

How do SUPPORT Tools help considering the equity and barriers for options implementation?

In this step, options are evaluated as to their feasibility in the context of implementation, seeking to identify potential barriers at different level, from users and health professionals, reaching organizational aspects of health systems. Article 6 discusses that the identification of barriers can use several methods to explore the opinions of stakeholders groups, such as "brainstorming", focal group, and interviews. Such discussion may also benefit from research results, based especially on observational studies and qualitative studies, but also includes studies that have evaluated the effects of policy implementation strategies.[1]

In addition, article 10 also addresses equity aspects in options implementation. This exercise must be made by decision-makers, once part of the population can be excluded in some options.[16]

The research process, initiated with the discussion and elucidation of the problem to the formulation of structured strategies that consider benefits, risks, costs, sustainability and the opinion of those involved, as well as the potential barriers for the implementation at various levels, from the individual to the organizational, is presented in a synthetic and structured document, the evidence briefs for health policies (like the one developed by EVIPNet Brazil in several themes, http://brasil.evipnet.org/), which can be used as a subsidy of the decision-making process within the formulation and implementation of health policies scope. Article 13 presents considerations and proposes a model for preparing and using this type of document.[8]

How do SUPPORT Tools help including tacit knowledge in the judgment about the applicability of the options

The methodological proposal of the SUPPORT Tools also advances to the dissemination of results by preparing the 'deliberative dialogues' or 'political dialogues', structured for the discussion at organizational and social level of the options addressed to the problems chosen (discussed in article 14).[3] 'Deliberative dialogues' include subjects directly or indirectly interested in the problem or in the policy options selected, such as, for example, health professionals, civil society representatives, researchers, and government officials, in order to maximize the dissemination of information and benefits of using evidence in decision-making and to promote its incorporation at various levels. The purpose of its execution is to allow for evidenced to be considered together and articulated with the visions, experiences and tacit knowledge of those who will be affected by future decisions related to a priority issue.

Other relevant topics about evidence-informed policy

Articles 15, 16, 17 and 18 address other relevant aspects in the preparation and implementation of options for health policies: 1) what strategies can be used to engage the public in health policy-making; 2) how to use research evidence to assess the pros and cons of policies; 3) how to deal with insufficient research evidence, since errors are often more common in this situation; 4) how to monitor the planning and evaluation of policies, in order to generate new and useful knowledge.[2,14,17,18]

Final considerations

EVIPNet Brazil is a network that promotes the use of scientific evidence for health policies and prepares evidence briefs for policy on relevant public health problems. In this context, the SUPPORT Tools its main methodological framework.

The SUPPORT Tools are an example of methods aimed at improving the use of research

evidence in a systematic and transparent way for the formulation and implementation of health policies, which can contribute to the qualification of the decision-making process and to the systems and services results, as well as the most effective implementation strategies, benefits, potential risks, sustainability, costs and barriers involved.

Lastly, the preparation of evidence-informed policies does not exempt them from results monitoring and assessment. Rather, it requires them to necessarily integrate their planning in order to increase the capacity of governments to promote incremental adjustments or policy restructurings whenever necessary.

References

1. Fretheim A, Munabi-Babigumira S, Oxman AD, Lavis JN, Lewin S. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 6. O uso de evidências de pesquisa para informar como uma opção será implementada. [visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-6-KO-040510.pdf

2. Fretheim A, Oxman AD, Lavis JN, Lewin S. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 18. Como monitorar o planejamento e avaliação de políticas? [visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-18-KO-050510.pdf

3. Lavis JN, Boyko J, Oxman AD, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 14. Organizar e utilizar os diálogos da política para apoiar a política de saúde baseadas em evidências. [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-14-KO-060510.pdf

4. Lavis JN, Oxman AD, Grimshaw J, Johansen M, Boyko JA, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 7. Localização de revisões sistemáticas. [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-7-KO-040510.pdf

5. Lavis JN, Oxman AD, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). Introdução. [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-0-KO-040510.pdf

6. Lavis JN, Oxman AD, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 3. Estabelecimento de prioridades para apoiar a formulação de políticas baseadas em evidências. [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-3-KO-040510.pdf

7. Lavis JN, Oxman AD, Souza NM, Lewin S, Gruen RL, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 9. Como avaliar a aplicabilidade dos resultados de uma revisão sistemática? [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-9-KO-050510.pdf

8. Lavis JN, Permanand G, Oxman AD, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 13. Preparo e uso de resumo de políticas baseadas em evidências. [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-13-KO-NEW-07.05.10.pdf

9. Lavis JN, Wilson M, Oxman AD, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 4. Como usar evidências de pesquisa para esclarecer um problema? [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-4-KO-040510.pdf

10. Fretheim A, Munabi-Babigumira S, Oxman AD, Lavis JN, Lewin S. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 5. Como usar evidências de pesquisa para estruturar opções com o objetivo de abordar um problema? [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-5-KO-040510.pdf

11. Lewin S, Oxman AD, Lavis JN, Fretheim A, García Martí S, Munabi-Babigumira S. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 11. Busca e uso de evidências sobre condições

locais. [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-11-KO-050510.pdf

12. Lewin S, Oxman AD, Lavis JN, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 8. Decidindo até que ponto uma revisão sistemática pode ser considerada confiável. [Visited on May 6, 2016] Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-8-KO-050510.pdf

13. Oxman AD, Fretheim A, Lavis JN, Lewin S. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 12. Busca e uso de evidências de pesquisa sobre utilização de recursos e custos. [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-12-KO-050510.pdf

14. Oxman AD, Lavis JN, Fretheim A, Lewin S. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 17. Como lidar com insuficiente evidência de pesquisa? [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-17-KO-050510.pdf

15. Oxman AD, Lavis JN, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 1. O que é elaboração de políticas baseadas em evidências? [acesso em 6 maio 2016].(gordurosa Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-1-KO-040510.pdf

16. Oxman AD, Lavis JN, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 10. Como considerar a equidade ao avaliar os resultados de uma revisão sistemática? [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-10-KO-060510-New.pdf

17. Oxman AD, Lavis JN, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 16. O uso de evidências de pesquisa para avaliar os prós e contras das políticas. [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-16-KO-050510.pdf

18. Oxman AD, Lewin S, Lavis JN, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 15. Envolvendo o público na elaboração de políticas baseadas em evidências. [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-15-KO-050510.pdf

19. Oxman AD, Vandvik PO, Lavis JN, Fretheim A, Lewin S. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). 2. Como fazer com que a sua instituição melhore o apoio ao uso de evidências de pesquisa para fundamentar a elaboração de políticas? [Visited on May 6, 2016]. Available at: http://sintese.evipnet.net/wp-content/uploads/2010/05/PORT-STP-2-KO-040510.pdf

Where to find the evidence to inform health policy?

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Abstract

The issue of access and use of evidence to support policy-making and decision-making processes in health is present in important strategies and recommendations of international and national organizations, as an element that contributes to meet the health priorities. The challenge facing policy and decision makers is where to seek this evidence in a universe of millions of documents, ranging from Google to more structured search systems, as are the Virtual Health Library and PubMed. This study presents the main information sources where that evidence could be finding.

Keywords: Access to information, Policy making, Public health policy

Introduction

The topic of access to reliable information and the exchange of health knowledge have long been considered essential for health development in all regions of the world. There is a consensus that up-to-date scientific knowledge contributes to health equity, development of health systems and services, processes of defining health programs and policies more effectively to meet the health priorities of countries.

Considering the Latin American and Caribbean region, we can point out the Strategy for Universal Access to Health and Universal Health Coverage (2014) and the Strategic Plan of the Pan American Health Organization (PAHO) 2014-2019, which specify strengthening information and research systems and the integration of evidence into health policies and health care, as well as facilitating the transfer of knowledge and the development of human resources for health.[2,3]

However, for this recommendations to become true for policy and decision makers, it is required the access to solid evidence that can clarify which services and programs should be offered or included, how to provide such services, which actions or interventions may work better to solve problem situations, which management arrangements are required to promote a change, etc.

In addition to access, it is necessary to know how and where to access these evidences (or information, or knowledge) and how to apply them in health decisions.

Information for policy making

Compared to other knowledge areas, health is the area with the greater amount of scientific production. Consulting only the Medline database, for example, we found more the a million new articles published in the year of 2015. Therefore, the challenge is to find

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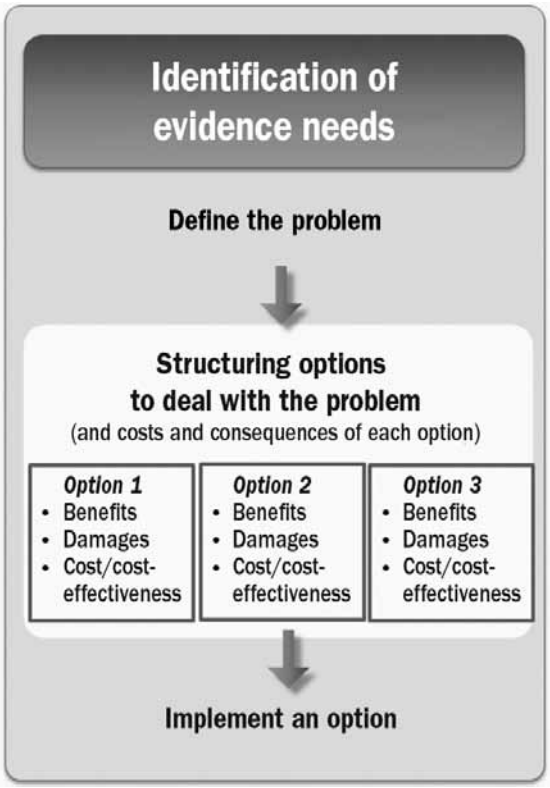
the "information/evidence" that better meets the needs of the health decision maker. It is important to highlight that evidences are not equally qualified or applicable for any health scenario, even those published in the best scientific journals or by renowned authors.

According to the SUPPORT method, used by the Network Evidence-Informed Policies (EVIPNet), the search and application of evidences are approached in three steps of the policy making process.[1]

Step 1 - Problem characterization
Step 2 - Options to deal with the problem
Step 3 - Planning for option implementation

Figure 1



For each of these steps there is at least one type of evidence that is more suitable to meet the need, and different information sources to find it.

Problem characterization

This is the first step of the policy making process or health decision-making, and intends to identify the problem and characterize it. We need to search evidences that answer the following questions:

1. What is the problem?
2. How did the problem draw attention and how did it influence the prioritization in the perspective of addressing the problem?
3. What predictors can be used or collected to establish the magnitude of the problem and measure progress/impact of it resolution?
4. What comparisons can be made to establish the magnitude of the problem and measure progress/impact of it resolution?
5. How can the problem be described and structured in order to encourage groups that might be interested in solving it?

And, considering the problem occurs in a specific health system or service, often in a certain city, it is the "local evidence" that can explain and help to understand the problem. Such evidences are included in predictors and information extracted from the health systems and services themselves, such as vital statistics, surveillance data and health management.

In the case of questions 4 and 5, where we search for evidences to establish comparisons for the magnitude of the problem, it is recommended to search publications of qualitative research, process evaluation, result evaluation and observational studies on the same problem. Some of these studies are found in non-conventional publications and, therefore, are harder to access than journal articles.

Considering the Brazilian context, we suggest the search of these evidences in the following information sources:

- **DATASUS/ Ministry of Health** - datasus.saude.gov.br Epidemiological, outpatient, financial, hospital, management, vital events and other information systems. The consultation is individual in each system available. It basically allows access to information by place and offers data export resources. It does not offer structured search tool.

- **IDSUS** - **SUS Development Index** - idsus.saude.gov.br Health indicators calculated from data provided by SUS managers to the National Health Information Systems and other information systems used to evaluate SUS performance in 24 predictors distributed among basic health care, outpatient and hospital care, and urgency and emergency care. It shows predictors by place and year (2010 and 2011). It does not offer structured search tool.

- **Strategic Management Support Room (SAGE)** - http://189.28.128.178/sage Information for monitoring the actions of the government's priority health networks; epidemiological and operational indicators related to diseases and injuries characterized as public health problems; and information on financial implementation of the Ministry of Health. It allows consultation to predictors by place, which are presented in charts with distribution per year.

- **LILACS** - lilacs.bvsalud.org Database indexing Latin American and Caribbean Literature on Health, published since 1982. In addition to journal articles, it indexes non-conventional documents, theses and government documents. It presents advanced and free search interface. It organizes search results by categories, which work as filters for search refinement. LILACS is integrated in the collection of information sources of the Virtual Health Library (BVS), at www.bvsalud.org.

- **ColecionaSUS** - www.bvsalud.org Database indexing scientific and technical literature published in SUS instances, including publications of the Ministry of Health. It presents advanced and free search interface. It organizes search results by categories, which work as filters for search refinement. ColecionaSUS is integrated in the collection of information sources of the BVS.

Options to deal with the problem

This stage of the policy making decision-making process in health aims to identify options to deal with a problem and assess each option for its possible benefits, harms or damages and local costs or cost-benefit ratio. We need to search evidences that answer the following questions:

1. What benefits can be gained from each option?
2. What damages can occur for each option?
3. What are the costs of each option and what local/national evidence exists on the cost-effectiveness?

4. What adaptations can be made for each option that may change benefits, damages and/or costs?
5. What perceptions and experiences of interest parties may influence acceptance and benefits/damages/costs?

To characterize costs and consequences of the options it is required to search and use several types of scientific evidences. When available, systematic reviews can meet this need, but policy and decision makers should nevertheless take into account the quality of reviews as well as the local applicability of their results, and should also consider equity issues. Reviews of economic assessments help to characterize the cost-benefit ratio of the options. In the lack of review studies, individual studies should be found.

In the case of questions 4 and 5, we search evidences on the evaluation of processes and examples of other systems and services where the option was implemented. But this evidence is not always found in systematic reviews, but in observational studies or qualitative research.

The main information sources to search for evidences for this step of the process are:

- **Cochrane Library** - www.thecochranelibrary.com Cochrane's systematic reviews, evaluated systematic reviews (DARE), evaluation of sanitary technologies, economic evaluations (HTA), controlled clinical trials (CENTRAL). The search is made through key words and offers navigation by topics corresponding to the Cochrane's review groups. The access to structured abstracts of reviews is free, in different languages. But the access to the complete Cochrane's review texts is restricted to subscribers, but some of them are of free access.

- **Virtual Health Library (BVS)** - www.bvsalud.org Gathers approximately 50 databases organized in collections. Includes bibliographic references of health technical and scientific documents, with link to the full text when available. The search is integrated and presents the search result in a single list, in addition to distribution in categories that work as filters to refine the search. It offers filters for the systematic review study type.

- **PubMed** - www.pubmed.gov. The main database of PubMed is Medline, which indexes articles of more than 6 thousand scientific journals worldwide. It presents free and advanced search and offers systematic review filter, which may be applied before or after the search by main subject.

- **Health Services Research PubMed** - www.nlm.nih.gov/nichsr/hedges/search.html It contains a selected collection of PubMed studies on health care quality and costs. It presents advanced and free search interface that allows application of pre-organized filters, such as: process evaluation, costs, result evaluations, qualitative research, among others.

- **Health Systems Evidence** - www.healthsystemsevidence.org It contains evidence briefs for policy: policy abstracts, overviews of reviews, abstracts of reviews, systematic reviews. It also includes implementation on governance, financial arrangements and provision of health systems, as well as implementation strategies that may

support changes in the health system. It presents friendly abstracts, scientific abstracts and full texts when available for free. It offers a link for studies included in the systematic reviews. The navigation is per categories and open search. It allows access to registered users.

- **Rx for change** - www.cadth.ca/rx-change It offers information based on evidence: quick answers, syntheses in evidence on efficacy and effectiveness of sanitary technologies, guidelines and evaluations of sanitary technologies. It also includes data of ongoing investigation on strategies used to modify the conduction of sanitary technology that prescribe the practice and use. Interventions are organized into categories: professional, financial, consumer, organizational and regulatory. The navigation can be made by categories, free search by intervention or systematic review. It also offers advanced search.

- **Health evidence** - www.healthevidence.org/ It gathers more than 4 thousand systematic reviews evaluated on effectiveness of interventions in the public health. It allows free search and advanced search, application of filters for thematic areas, population, and type of implementation strategy, among others. It allows access to registered users.

Planning for option implementation

This step of the policy or decision-making process in health aims to plan the implementation of the policy or decision, which may demand a complex set of actions in several levels of the health system or service. The following questions should be considered when planning the option implementation process:

1. What are the potential hurdles for a successful implementation of the policy or decision?
2. What strategies should be considered to facilitate behavioral changes required for patients/citizens?
3. What strategies should be considered to facilitate behavioral changes required for health professionals?
4. What strategies should be considered to facilitate institutional/organizational changes?
5. What strategies should be considered to facilitate changes required in the system?

Evidences that may support this step of the process could be in the implementation plans that are usually developed in an improvised way and are rarely substantiated by evidences. Nevertheless, studies on effectiveness, qualitative research and evaluation studies of policies and programs can be searched in the available sources of information listed in the previous item, such as:

- **Health Systems Evidence** - www.healthsystemsevidence.org
- **Rx for change** - www.cadth.ca/rx-change
- **Health evidence** - www.healthevidence.org/

Conclusion

As we can see, there is no single information source where it is possible to search and find evidences to inform all steps of the policy or decision making process in health. And although

there is overlap of evidence among the different information sources, the complementation of evidence prevails.

Thus, the team that supports the policy or decision making process in health has to know and use all available information sources to select and evaluate the most appropriate evidence to inform the steps in this process.

The EVIPNet initiative of the World Health Organization is intended to promote the use of scientific evidence in health policy making to strengthen health systems.

In Brazil, the Department of Science and Technology of the Ministry of Health (Decit/SCTIE/MS) coordinates the EVIPNet Brazil and has developed a strategy to promote the making of health policies informed by evidence at the level of states and municipalities, especially in partnership with the Health Departments.

One of the main work areas of EVIPNet Brazil has been the development of capabilities for the search and use of evidence according to the SUPPORT methodology presented in this article, with the aim of contributing to a culture of systematic use of evidence in health systems.

Bibliographical References

1. Lavis JN, Oxman AD, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP): uma coletânea de artigos publicados na revista 'Health Research Policy and Systems'. Brasília (DF), Brazil: DeCIT/MS; 2009. 429 p. [Visited on Feb. 16, 2016] Available at: http://www2.paho.org/Hq/index.php?option=com_content&view=article&id=3287&Itemid=2432&lang=pt

2. Pan American Health Organization. Estratégia para o acesso universal à saúde e a cobertura universal de saúde. 53° Conselho Diretor, 66ª Sessão da OMS para as Américas; de 29 de setembro a 3 de outubro de 2014; Washington (DC), Estados Unidos. Washington (DC); 2014 (CD53/5, Rev. 2 (Port))

3. Organização Pan-Americana da Saúde. Plano Estratégico da Organização Pan-Americana da Saúde 2014-2019. 52° Conselho Diretor, 65ª Sessão do Comitê Regional; de 30 de setembro a 4 de outubro de 2013; Washington (DC), Estados Unidos. Washington (DC); 2013 (OD345 (Port))

Systematic review of complex public health interventions: the example of patient safety culture

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ABSTRACT

Complex interventions are groups of interventions that usually involve changing behaviors. Such interventions are especially relevant to solve public health problems that require different strategies to be solved, as obesity and violence, for example. They offer support for decision making process. Present paper discusses concepts and methods to interpret scientific evidence of complex interventions assessed in systematic reviews. To context the processes of searching and critical assessment, we illustrated a scenario of strengthening the culture of patient safety in the hospital setting. The example is discussed from the definition of a well-structured research question, which consists in defining the target population, characterization of intervention, comparison, outcome and context. Then we present the data sources to identify systematic reviews of complex interventions. We also present critical assessment criteria to help certifying the reliability of the systematic review. Ultimately, the interpretation of findings from weak evidence is discussed facing other parameters uses in decision making process. The practice of using systematic reviews about public health interventions is a strategy to allow to the process of policy-making in public health to identify the most effective intervention. This method is prone to contribute to health promotion to the population.

Key-words: systematic review, complex interventions, safety patient culture

INTRODUCTION

Taking care of the population's health is complex. Several sectors that support the society are related to health: education, individual and collective economy, political organization and cultural aspects. Such elements evidence that the health decision-making process from a managerial perspective involves the resolution of matters that are hardly answered simply or with only one intervention.

Let's take fight against smoking as an example. Some people are not influenced by warning images contained in cigarette packages. On the other hand, they may reduce smoking habits if the price of the product is higher - due to taxes - and if bars and restaurants prohibit smoking. The young audience can be less influenced to start the habit due to prohibited advertising of cigarette, and those who wish to stop smoking may undergo a rehabilitation treatment. These strategies are not mutually exclusive, but complement each other to address a health problem in society. Considering the potential costs and conflicts of interest involved, decisions should be based on

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scientific evidences supporting the adoption of health strategies.

Complex or multifaceted interventions are comprised by several elements, which can be independent or interdependent.[6] Components usually include habits, behavioral parameters and methods of organizing and offering customs.

Assessing multifaceted information is an important challenge. Assessment scenarios are dynamic and research procedure standardizations are operatively unfeasible. Thus, variations in observational and experimental designs are common: before and after studies, temporal series, clusters, stepwise.[17] Such a methods diversity requires the conduction of complex statistical procedures that may hinder the interpretation of study results. Additionally, some particularities usually solved in randomized clinical trials are present such as natural history, Hawthorne effect, regression to mean and placebo effect.[5, 11, 12] Another limitation to the use of studies is the presence of biases and conflicts of interests, which often misrepresent the results found.

In this sense, systematic reviews are feasible alternatives to find evidences of complex interventions. [17] Systematic reviews are studies that assess the quality and summarize other studies systematically, that is, with a strict method to enable the identification of all relevant researches in the field. Thus, instead of analyzing several studies with one single document, the answer sought can be found.

The purpose of this article is to facilitate the use of complex interventions systematic reviews in public health decision-making.

SCENARIO

Almost 11.5 million hospitalizations in the Brazilian Public Healthcare System (SUS) are conducted every year.[1] Several factors influence the improvement of hospitalized patients as the gravity of the situation, availability of health technologies and training of the team. In addition to factors linked to the disease and infrastructure of the place, organizational factors, such as safety culture, cause a direct impact on patients' outcome.[3, 4]

Safety culture is the product of values, attitudes, competencies and individual and collective behavior standards that determine the style and proficiency of an organization.[10] Safety culture results from actions and stances of the employees of an institution whose behavior stables how reliable an organization is when providing its services.[7] Understanding the theme's relevance, the Ministry of Health launched the National Patient Program in 2013 with the purpose of implementing the promotion of safety culture.[2]

Considering the need to increase the patient's safety culture in public hospitals of certain cities, the health secretary seeks effective strategies for adoption in hospitals during the management.

SEARCH AND ASSESSMENT OF SYSTEMATIC REVIEWS OF COMPLEX INTERVENTIONS

To use the evidence available in systematic reviews of complex interviews, it is necessary to locate and assess them critically. Thus, the first step is to make structured questions that will guide the other steps.

How to make questions about public health

Avoiding generic questions and prioritizing structured questions is recommended. Research questions are well structured when they include the following elements: population, intervention,

comparison and outcome, summarized in the acronym PICO.[8]

The population is the target audience that is not always included in a well-defined clinical condition. The intervention refers to a better characterization of the measure that can be implemented. It can be not well defined in the managerial perspective for being unknown, or being the object of identification. Sometimes, comparison is the lack of assessment strategy; however, finding comparisons between different strategies is possible and consequently, prioritizing interventions with better performance. Outcomes consist in results aimed for the target audience health or impacts responding to managerial interests.

The context in which complex intervention was introduced is also important to assess if the effectiveness found can be due to the context and not the intervention itself.[13] On systematic complex intervention reviews, the acronym PICOC guides the structuring of the question. The structured question to answer the above scenario is shown on Table 1.

Table 1. Structuring of the question "what are the effective strategies to increase safety culture in Brazilian public hospitals?"

Description	Acronym	Question components	Term in English (MeSH)
Population	P	Hospitals	*Hospitals*
Intervention	I	[a]	-
Comparison	C	[a]	-
Outcome	O	Safety culture	*Culture*; *Safety*
Context	C	Brazilian Public Healthcare System	[b]

Notes:
MeSH, *Medical Subject Headings*
a, Intervention and comparison are unknown in the case of this question.
b, Term not relevant to conduct the search.

Search for systematic reviews of complex interventions

After defining the question's components, the search for reviews can be conducted preferably using the term in English. In order to find the terms in this language, the service of Health Sciences Descriptors (MeSH, http://decs.bvs.br/) from the Latin American and Caribbean Center for Health Sciences Information (BIREME) should be used. When searching on MeSH, the word in Portuguese or Spanish can be entered and the descriptor in English can be obtained. MeSH means Medical Subject Headings, PubMed's controlled vocabulary.[15]

From the components of the structured question, the English term was obtained and will be used to search on bibliographical databases (Table 1).

There are bibliographical databases more specialized in public health interventions. The search on these information sources shall provide results more applicable to the formulation of evidence-based policies. The main databases to search for systematic interventions of

complex interventions are presented on Table 2. Searches can also be made on other usual health bibliographical databases - as PubMed and Scopus - however, results will be less specific, thus making the process more difficult for the user.

Answering to the scenario of this article, the strategy "hospitals AND culture AND safety" was used on the Health Systems Evidence database. Twenty-three articles were redeemed. A systematic review published in 2013 including 33 primary studies was selected for having the answer to the question.[18]

The authors searched for studies that measured the safety culture of participating hospitals before and after applying interventions and searched for important results for patients on the systematic review selected.[18] Three main types of interventions were proven to be effective: 1) training: in teams and communication tools; 2) visit rounds: with the participation of officers of the hospital and interdisciplinary visits; and 3) comprehensive unit-based safety program (CUSP): a multifaceted intervention including the involvement of officers and team training along with strategies to translate the evidence for practice.

Table 2. Bibliographical databases to search for complex public health interventions

Source	Address	Access	Characteristic
Health Systems Evidence	www.healthsystemsevidence.org	Free of charge	Presents critical assessment of studies
PDQ evidence	www.pdq-evidence.org	Free of charge	Groups studies according to type and where it is cited
Health Evidence	www.healthevidence.org	Free of charge[a]	Classifies the quality of study into strong, moderate or weak
The Cochrane Library	www.thecochranelibrary.com	Paid[b]	Contains over 9 systematic high quality reviews

Notes:
a, requires user registration.
b, Access previously provided through the Virtual Health Library is suspended.

Critical assessment of systematic reviews of complex interventions

Once the systematic review of interest is identified, checking if the procedures used to prepare its content were the most appropriate is necessary. The purpose is to check whether there was any deviation of conduct, intentional or not, that may have affected its recommendations.

As any other assessment process, many interpretations are subjective and depend of prior knowledge of the assessor on systematic reviews and strategies in analysis. This fact points out that a script with the essential information for this assessment reduces the need to return to reading the article, reduces the most common errors in interpretation, increases the quality of the analysis, detects potential deviations or lack of interpretation, and avoids neglecting important items.

Adopting scripts to analyze studies has its benefits exceeding its initial role: the use causes a general vision of evidence quality through analyses focused on several aspects relevant for a design. Researchers are also benefited as the script may serve as guidance for planning, executing and reporting appropriately the research

results, thus providing greater transparency and reproducibility of the evidence generated. Another benefit arises in this context: the confidence of information consumers increases.

Table 3 presents a list of items to be search on the critical assessment of a systematic review. In short, the systematic review is expected to have a well-founded clinical question, conduct a broad search in sensitive and reproducible literature, select and extract information without bias, critically evaluate articles included, make an adequate synthesis of the available evidence, and explore the occurrence of biases and the overall quality of work.

Table 3. Assessment of the methodological analysis of systematic reviews (based on AMSTAR[16] and GRADE[9])

Item	Description	Assessment
1	Research protocol	Check if inclusion and exclusion criteria should be established before conducting the research, preferably by publishing research protocol or project.
2	Selection of studies and collection of data	Evaluate if the selection and collection of data was performed by at least two people independently and if a procedure was defined to resolve disagreements. It is also accepted that one person collects the data and another confirms the collection.
3	Bibliographical search	Check if the search on literature was comprehensive, at least two electronic sources should be researched, informing the years and the databases used. Keywords and search strategies should be provided. All searches should be complemented by consulting contents, reviews, textbooks, updated specialized registers or specialists in the field of specific study and by reviewing the references of the studies found.
4	Gray literature	Evaluate if authors searched studies independently of their publication status or excluded studies or not based on their publication status, language, etc.
5	Studies list	Check if the list of studies included or excluded was provided.
6	Characteristics of studies included	Check if the characteristics of the studies included were provided in an aggregate way (as a table), providing data on participants, interventions, and the results of the original studies. The different characteristics of all the studies analyzed, such as age, race, gender, relevant socioeconomic data, stage of the disease, duration, severity or comorbidities should be reported.
7	Scientific quality assessed	Confirm if the scientific quality of studies included was assessed and documented. Assessment methods should be provided a priori.
8	Evidence quality	Check if the quality of the new evidence generated by the systematic review was evaluated, preferably by GRADE tool (quality of evidence of each outcome) and if the quality of the evidence was adequately used in the preparation of conclusions.
9	Methods to combine studies results	If a meta-analysis is performed, check if it was appropriate to collect the data and if heterogeneity tests were performed (chi-square test for homogeneity, I^2). In case of heterogeneity, check whether a random effects model was used and/or whether combining the results was appropriate.
10	Publication bias	Check if the publication bias risk was assessed, which can be made through a funnel chart and/or statistical tests (for example, Egger test).
11	Conflict of interests	Check if funding sources were clearly informed both in the systematic review and studies included.

Notes:

AMSTAR, *a measurement tool to assess systematic reviews*

GRADE, *grading of recommendations, assessment, developing and evaluation*

It is emphasized that some research sources on Table 2 also conduct critical assessments of systematic reviews comprising its databases. The critical assessment of the selected article showed that the review: 1) started from a clear question supported by explicit inclusion criteria; 2) searched in several databases; 3) only selected studies conducted in English-speaking countries; 4) reported the use of methods that avoid bias in the conduct of the review, such as paired selection; 5) assessed the quality of included studies, although not explicitly; 6) narratively synthesized the results considering the high heterogeneity; and 7) concluded and made low reliability recommendations, since the original evidence is of poor methodological quality.

Most of the scientific information available is in English as there is a trend of publishing articles in languages that allow reading by several scientists. This can be a limiting factor within a decision-making context, especially in developing countries as Brazil. Some initiatives seek to minimize the inequity in access to information such as the Brazilian Network for Health Technology Assessment (http://rebrats.saude.gov.br/) and EVIPNet Brazil (http://brasil.evipnet.org).

How to interpret evidences of complex interventions

Health scientific evidence is usually insufficient to guide a managerial decision-making process.[14] On the adopted scenario, the best evidence available is of poor methodological quality and suggests that team training, rounds involving team leaders and strategic CUSP are the most promising ones.

Distinguishing two relatively common phases is essential: 1) “inconclusive evidences”; and 2) “lack of effect”. These phrases are not interchangeable. The first one suggests that better designed studies may confirm or refute the findings. The second one suggests that the intervention does not work. Statistically significant results are not always associated with important health impacts and vice versa.

With the lack of reliable scientific evidences supporting the decision-making, the manager needs good reasons to justify a confident judgment stance.[14] The most common ones are: reduced mortality, reduced morbidity, adverse reactions, pain/discomfort, sequelae, costs, relation with current policies, aspects of equity and adherence by providers/users. Regardless of the scenario, caution to adopt interventions demanding major investments that cannot be recovered is recommended.

Safe assessments of complex interventions are achieved with greater humility and uncertainty and with less good intent and plausible theory.[14] Good interpretation practices avoid underlying theories, indirect evidence, secondary outcomes, and evidence from observational studies. Such a conduct will provide more responsible and ethical decision-making processes.

Final considerations

The use of complex interventions systematic reviews in public health stand out in health managerial decision-making. Proper evidence in the hands of those that can implement measures that will make the difference in the life of several people is a powerful society improvement tool. Knowing and disseminating the basic location and assessment principles of this evidence is strategic for health public policies to be based on the best evidence available.

REFERENCES

1. Ministério da Saúde. Sistema de Informações Hospitalares do SUS (SIH/SUS). Brasília (DF); [Visited on March 14, 2016]. Available at: http://datasus.saude.gov.br/

2. Ministério da Saúde. Portaria Nº 529, de 1º de abril de 2013. Institui o Programa Nacional de Segurança do Paciente (PNSP). Brasília (DF); 2013 [Visited on: March 14, 2016]. Available at: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt0529_01_04_2013.html

3. Berry JC, Davis JT, Bartman T, Hafer CC, Lieb LM, Khan N, et al. Improved safety culture and teamwork climate are associated with decreases in patient harm and hospital mortality across a hospital system. Journal of Patient Safety. 2016 Jan 7. [Epub ahead of print]

4. Brilli RJ, McClead RE, Jr., Crandall WV, Stoverock L, Berry JC, Wheeler TA, et al. A comprehensive patient safety program can significantly reduce preventable harm, associated costs, and hospital mortality. J Pediatr. 2013 Dec;163(6):1638-45.

5. Colloca L, Jonas WB, Killen J, Miller FG, Shurtleff D. Reevaluating the placebo effect in medical practice. Z Psychol. 2014 [Visited on March 14, 2016]; 222(3):124-7.. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4211281/pdf/nihms-636453.pdf

6. Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M. Developing and evaluating complex interventions: the new Medical Research Council guidance. BMJ. 2008 [Visited on March 14, 2016];337:a1655. Available at: http://www.bmj.com/content/bmj/337/bmj.a1655.full.pdf

7. DuPree ES. Highly reliable behaviors. Isr J Health Policy Res. 2015 [Visited on March 14, 2016];4:51. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4587852/pdf/13584_2015_Article_48.pdf

8. Galvão TF, Pereira MG. Revisões sistemáticas da literatura: passos para sua elaboração. Epidemiol Serv Saúde. 2014 [Visited on March 14, 2016];23:183-4. Available at: http://scielo.iec.pa.gov.br/pdf/ess/v23n1/v23n1a18.pdf

9. Galvão TF, Pereira MG. Avaliação da qualidade da evidência de revisões sistemáticas. Epidemiol Serv Saúde. 2015 [Visited on March 14, 2016];24(1):173-4. Available at: http://www.scielo.br/pdf/ress/v24n1/2237-9622-ress-24-01-00173.pdf

10. Halligan M, Zecevic A. Safety culture in healthcare: a review of concepts, dimensions, measures and progress. BMJ quality & safety. 2011;20(4):338-43.

11. McCambridge J, Witton J, Elbourne DR. Systematic review of the Hawthorne effect: new concepts are needed to study research participation effects. J Clin Epidemiol. 2014 [Visited on March 14, 2016];67(3):267-77. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3969247/pdf/main.pdf

12. Neumann M, Bensing J, Mercer S, Ernstmann N, Ommen O, Pfaff H. Analyzing the "nature" and "specific effectiveness" of clinical empathy: a theoretical overview and contribution towards a theory-based research agenda. Patient Educ Couns. 2009;74(3):339-46.

13. Ogilvie D, Craig P, Griffin S, Macintyre S, Wareham NJ. A translational framework for public health research. BMC Public Health. 2014 [Visited on March 14, 2016];9:116. Available at: http://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-9-116

14. Oxman AD, Lavis JN, Fretheim A, Lewin S. SUPPORT Tools for evidence-informed health Policymaking (STP) 17: Dealing with insufficient research evidence. Health research policy and systems / BioMed Central. 2014 [Visited on March 14, 2016];7 Suppl 1:S17. Available at: http://health-policy-systems.biomedcentral.com/articles/10.1186/1478-4505-7-S1-S17

15. Pereira MG, Galvão TF. Etapas de busca e seleção de artigos em revisões sistemáticas da literatura. Epidemiol Serv Saúde. 2014 [Visited on March 14, 2016]; 23:369-71. Available at: http://scielo.iec.pa.gov.br/pdf/ess/v23n2/v23n2a19.pdf

16. Shea BJ, Grimshaw JM, Wells GA, Boers M, Andersson N, Hamel C, et al. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. BMC Med Res Methodol. 2014 [Visited on March 14, 2016];7:10. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1810543/pdf/1471-2288-7-10.pdf

17. Tricco AC, Cardoso R, Thomas SM, Motiwala S, Sullivan S, Kealey MR, et al. Barriers and facilitators to uptake of systematic reviews by policy makers and health care managers: a scoping review. Implementation science : IS. 2014 [Visited on March 14, 2016];11(1):4. Available at: http://implementationscience.biomedcentral.com/articles/10.1186/s13012-016-0370-1

18. Weaver SJ, Lubomksi LH, Wilson RF, Pfoh ER, Martinez KA, Dy SM. Promoting a culture of safety as a patient safety strategy: a systematic review. Ann Intern Med. 2013[Visited on Mar 14, 2016];158(5 Pt 2):369-74. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4710092/pdf/nihms737798.pdf

Development and Adaptation of Evidence-Informed Guidelines in Latin America and the Caribbean

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Abstract

Purpose: to identify and describe the components, pros, and cons of practice guidelines (PG) as well as the development process and the effects thereof on this process in Latin American and Caribbean (LAC) countries.

Methodology: a narrative review of the literature with a descriptive bibliometric analysis of the practice guideline production processes in Latin America and the Caribbean.

Results: the practice guideline process is systematic, valid, and reproducible. GRADE is the methodological strategy that has been standardized worldwide for the development of this type of scientific evidence. In LAC, the practice guideline drafting process has grown stronger in the past decade, with institutional ownership on the government side, an effective standardization of delivery of health services, the establishment of process governance, and a source of information for other healthcare system functions.

Findings: the practice guidelines have undergone significant methodological development, which ensures their validity and reproducibility. In LAC, there has been a breakthrough in the development, implementation, and assessment of potential health outcomes and the performance of the healthcare system.

Keywords: guidelines; practice guidelines; systematic review; healthcare systems; evidence; Latin America and the Caribbean.

Introduction

Healthcare professionals must take multiple complex decisions on a daily basis in order to identify the most appropriate prevention, diagnostic, or treatment option by assessing the likely clinical and public-health results, the risks, the costs, and the social and individual impact of the different available options[18]. The complexity of the decision-making process grows due to the gradual increase in the number of available options, the volume of scientific evidence, as well as the presence of finite resources in healthcare systems[4,6,8,23].

The development of practice guidelines (PG) influences the delivery of healthcare services in both the standardized delivery of health services by healthcare professionals and the optimization of human resources and funds in the healthcare system. Evidence-informed practice guidelines

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have several pros over another type of documents (for instance, consensus based on expert opinion) since they incorporate, systematically and explicitly, the effectiveness of procedures or the validity of diagnostic evidence, the benefit-cost ratio of each procedure, the use of funds and costs, as well as patient preferences. [4,8,23]

Practice Guidelines, their quality and the GRADE System

What is an evidence-informed practice guideline?

The incorporation of scientific research findings, that is, evidence, into the decision-making process has become a key strategy to improve healthcare systems, ensuring equal access to health services and furthering universal healthcare. The scientific-evidence-informed decision-making process refers to the systematic and transparent use of research study findings and information from the context and scope of its application in order to improve the health of society at large. The drafting and implementation of a practice guideline is a systematic, structured, and rigorous process that requires time, dedication, and key resources[3,4,8,23] and is based on the preparation of evidence-informed recommendations.

The World Health Organization (WHO) *Handbook for Guideline Development*[18] defines "guideline" as any document containing "recommendations about health interventions, whether these are clinical, public-health or policy recommendations. A recommendation tells the intended end-user of the guideline what he or she can or should do in specific situations to achieve the best health outcomes possible, individually or collectively. It offers a choice among different interventions or measures having an anticipated positive impact on health and implications for the use of resources."

As stated in the definition, the World Health Organization uses the term *guideline* to refer to any documents containing evidence-informed recommendations. This organization has translated the term *guidelines* into different languages. For instance, among other terms, the Spanish version uses *guías* while the Portuguese version uses *diretrizes*. Regardless of the name being used, for recommendations to be "evidence-informed," they must follow an explicit, rigorous, and systematic process of research, synthesis, and assessment of the quality of the evidence and preparation of recommendations, which tends to ensure transparency and reduce the presence of bias and conflicts of interest. To this end, they must base their methodology on systematic literature reviews by multidisciplinary and suitable teams and incorporate aspects such as the values and preferences of patients, the cost and feasibility in the implementation of recommendations, among others[18]. For the purposes hereof, we will use the terms *guideline* and *practice guidelines* to refer to these documents.

What is not an evidence-informed practice guideline?

There are certain types of documents that are not considered guidelines according to the World Health Organization definition. Therefore, they are not required to be "evidence-informed." These include documents that specify established principles; "information documents that report facts, describe evidence, or document or review existing practices or interventions, provided that such documents are not making recommendations or advocating commitment of resources"; documents containing standards for manufacturing health technologies (pharmaceuticals and vaccines); "how-to documents such as operational manuals, tools, or implementation guides" or "documents

that describe standard operating procedures for organizations or systems," among others[18].

What is the GRADE system?

The Grading of Recommendations Assessment, Development and Evaluation (GRADE) system, which was developed by the GRADE Working Group[IX] evaluating and classifying the quality of (or certainty of) the evidence and providing the tools to decide the direction and strength of recommendations[4,8,23].

GRADE explicitly considers the factors that determine the quality of the evidence and how strong the recommendation is. Even though there are many systems to achieve these objectives, some of them are exceedingly complex, mostly rate the quality of the evidence based on study design instead of evaluating the existing body of evidence for each outcome, and fail to adequately associate the evidence with the recommendation.

The body of evidence (all the evidence that answers one of the research questions) may be composed of reports from a number of well-designed cases, cohort studies, or randomized clinical trials that have significantly reduced bias. In addition to considering study design, GRADE uses aspects such as risk of bias, inconsistency, imprecision, indirectness, and publication bias, among others, to determine the quality of the evidence.

The GRADE system also makes it easier to rate the strength of recommendations. The strength of a recommendation determines its implications. Therefore, it is key to know whether a recommendation is strong (most of the times, the decision should be based on this recommendation) or weak (most of the times, the decision could be based on this recommendation, but, oftentimes, it may differ). When formulating recommendations, the GRADE system utilizes the quality of the evidence regarding the effectiveness of interventions; the balance of benefits and harms; the costs; the values and preferences of patients (or users); feasibility; equity, among other aspects. Thus, a recommendation is considered to be "informed," provided other facts are taken into account with the evidence[4,8,23].

What is the AGREE Instrument?

The AGREE II (Appraisal of Guidelines for Research and Evaluation II) Instrument[X] has been developed to evaluate quality in the preparation and reporting of practice guidelines. It comprises 23 items, which are organized into six quality domains: 1) scope and purpose; 2) stakeholder involvement; 3) rigor of development; 4) clarity of presentation; 5) applicability; and 6) editorial independence[3]. For each one of these, two or more independent appraisers are in charge of the review and a weighted score is calculated. Then, the instrument enables a global rating of the quality of the guideline and whether the guideline is recommended, recommended with modifications, or not recommended. It is a very useful instrument for practice guidelines developers as well as practice guideline users, since it allows for an evaluation of the quality before deciding on the use or adaptation of the practice guideline within its context.

What is the quality of practice guidelines in the region?

In Latin America and the Caribbean, public institutions as well as scientific societies and private institutes produce a large amount of practice guidelines. Even though there is

[IX] http://www.gradeworkinggroup.org/_ES/index.htm

[X] http://www.agreetrust.org/

no widespread and continuous appraisal of them, multiple studies have been published about it[1,10,20,21,22]. Findings from these studies consistently show that the quality of guidelines is variable and that there is room for improvement in preparation and adaptation processes[1,10,20,21,22]. Based on the appraisal of guidelines using the AGREE II Instrument, quality domains with the lowest scores in those studies are rigor of development, the applicability of recommendations (implementability and organizational, behavioral, and financial implications of applying the guideline), and stakeholder involvement (the degree to which the guideline represents the points of view of potential users). In Brazil, Ronsoni *et al.* evaluated the quality of applicable guidelines in Brazil since 2009. They identified 59 clinical protocols and therapeutic guidelines (PCDT) from 2009 to 2012. Out of those, eight were picked at random and assessed by three independent appraisers. In the general balance of the final assessment of the global quality of guidelines, two appraisers recommended, with modifications, the use of eight practice guidelines and one did not recommended any of them[21]. The results showed the need to adjust the clinical protocols and therapeutic guides. Nonetheless, because of the instrument's limitations, more studies are needed to determine the quality of the evidence being used in the generation of clinical protocols and therapeutic guides[21].

Practice Guidelines in Latin America and the Caribbean

In general, the development of practice guidelines, like health technology assessment (HTA), has become a key element for the decision-making process in public health and clinical practice within the context of universal healthcare. In Latin America and the Caribbean, the process of developing evidence-informed practice guidelines started almost two decades ago, urged by multiple academic, higher-education centers with research groups that are interested in developing secondary scientific evidence for the decision-making process[4]. The Cochrane Collaboration, by spreading a systematic, rigorous, and explicit methodology to prepare systematic reviews on health interventions, made it easier to establish capabilities that would later become the basis for generating evidence-informed practice guidelines[2-19]. This process occurred at the same time as the creation of premises for the generation of scientific evidence for the healthcare-related decision-making process. In the region, there were different trends, such as the creation of independent health technology assessment agencies or branches of the governing body (the departments of Health) that were in charge of appraising and controlling the quality of the health service delivery processes.

The production of practice guidelines is also relevant. The decision to adapt, adopt, or create practice guidelines *again* has been the hallmark of the behavior in the production of this type of scientific evidence. For instance, Mexico has prioritized the adoption and adaptation of practice guidelines and this is the country that has developed practice guidelines the most (n=699), followed by Brazil, which decided to develop their practice guidelines *again* and then adopt the practice guidelines from other development groups (n=95). The production of national guidelines by other countries includes Argentina (n=76), Colombia (n=42), Chile (n=45), Ecuador (n=32), and Peru (27) (Table 1). Another relevant process is the creation of methodological handbooks for the development of practice guidelines in multiple countries. Brazil, Colombia, Chile, Mexico, and Peru have created methodological handbooks for the practice guideline development and implementation processes (Table 1).

Table 1 – Institutionalization of the Practice Guideline Development Process in Select Latin American and Caribbean Countries

HEALTH TECHNOLOGY ASSESSMENT CENTERS						
Country	**Name of Center**	**Year Established**	**Enabling Act**	**Methodology**	**Number of Policy Guidelines**	**Link**
Mexico	National Healthcare Technology Excellence Center (CENETEC)	2004	HTA required by the Mexican National Health Board, which defines the list of health technologies (2011)	Adapting and adopting practice guidelines	699	http://www.cenetec.salud.gob.mx
Brazil	National Health Technology Incorporation Commission (CONITEC)	2011	Decree No. 7.646/2011: creates the National Health Technology Incorporation Commission (CONITEC) (2011)	Developing and adapting practice guidelines	95	http://conitec.gov.br/index.php/protocolos-e-diretrizes
Colombia	Health Technology Assessment Institute and Office of Quality of the Department of Health and Social Protection	2012	Health Technology Assessment Act (2011)	Developing practice guidelines	42	IETS: http://www.iets.org.co Department of Health: http://gpc.minsalud.gov.co
Chile	Office of Quality and Patient Safety of the Department of Health (ETESA)	2011	N/A	Developing practice guidelines	45	http://www.ispch.cl/asuntoscientificos/subdepto_estudios_etesa
Argentina	Clinical and Sanitary Effectiveness Institute	2012	N/A	Developing practice guidelines	69	http://www.iecs.org.ar
	The National Coordination Unit of Health Technology Assessment and Implementation	2009	N/A			http://www.sssalud.gov.ar/index/index.php?cat=tecbio&opc=tecbio
Uruguay	Office of Health Technology Assessment of the Department of Health	2009	N/A	Developing and adapting practice guidelines	23	http://www.msp.gub.uy
Peru	Department of Health	2010	N/A	Developing and adopting practice guidelines	27	http://www.essalud.gob.pe/ietsi/
Ecuador	Department of Health	2012	N/A	Developing practice guidelines	32	http://www.salud.gob.ec/guias-de-practica-clinica/

The development of practice guidelines, the assessment of technologies, and the establishment of government agencies specializing in their development have significantly boosted research into these processes in the various countries in the region. To illustrate the progress of guideline publication in the region, we have conducted a bibliometric search in the Medline (PubMed) and Embase databases with the following search strategy: ("guideline"[Publication Type] OR "guidelines as topic" [MeSH Terms] OR "guidelines"[All Fields]), between 2000 and 2015. Countries such as Mexico, Argentina, and Brazil have significantly propped up scientific evidence regarding the development, implementation, and adherence to practice guidelines in their countries. As of 2010 and 2011, Colombia and Chile have increased their scientific production in issues that pertain to the development and impact on equity of practice guidelines (Table 2).

The incorporation of practice guidelines into the clinical-practice and public-health decision-making process has not been systematically documented thus far in countries in the region. Likewise, the impact on health results has not been documented either. However, Latin American countries have started processes to integrate and implement practice guidelines and their recommendations in clinical practice as well as processes to deliver health services. For instance, Colombia has developed normative processes that ensure the incorporation of practice guideline recommendations into the delivery of health services by using the accreditation process for institutions that provide the insured population with health services (Resolution 2003 of 2014)[12]. This resolution states that healthcare institutions must use evidence-based practice guidelines in their services, which must be developed by the Colombian Department of Health. If there is no practice guideline available, then an adopted high-quality guideline. Likewise, Mexico has developed practice guideline implementation processes nationwide in all healthcare subsystems, generating implementation handbooks for the different types of healthcare professionals in the healthcare system[24].

Why is it necessary to strengthen the generation of evidence-informed practice guidelines in the region?

Practice guidelines have become a key element in the decision-making process in public health and clinical practice because of aspects such as: 1) standardization of high-quality healthcare processes; 2) responsiveness; 3) the establishment of governance in the decision-making process in clinical practice and the healthcare system; and 4) as a research-generating element and its use in key parts of the system[7].

1) Standardization of Healthcare Processes

Practice guidelines are effective strategies for reducing the variability, in clinical practice, of the different activities that involve delivering health services directly. The effect of standardizing processes leads directly to two aspects: a) improved healthcare results and b) improved effectiveness in the delivery of health services[5,7]. As to the former, there is evidence to suggest that mortality drops when patient safety policies and practices are enshrined in practice guidelines; the latter revolves around the standardization of service delivery processes, which has generated results in cost-cutting efforts and the effective use of resources during visits. On the other hand, practice guidelines enable the creation of a culture of critical consumption of the scientific evidence that improves the practices of healthcare professionals[7].

Table 2. Research Into the Progress of Practice Guideline Publication in Latin American and Caribbean Countries (2000-2015) [Medline (PubMed) and Embase Databases]

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Mexico	23	27	43	34	49	51	73	56	79	86	85	107	114	117	146	199
Argentina	14	11	14	20	19	28	25	28	40	31	48	47	61	72	103	92
Brazil	6	6	9	16	10	10	16	23	27	37	48	45	43	57	54	64
Chile	7	8	7	7	4	19	15	20	21	25	23	29	30	41	57	70
Colombia	2	1	2	2	3	9	13	5	13	13	15	17	35	41	67	59
Grenada	3	3	6	4	6	6	11	12	11	17	20	21	20	19	36	59
Peru	3	1	2	2	6	6	8	4	11	7	11	18	24	21	29	24
Cuba	2	2	3	3	3	5	2	6	3	3	6	12	12	13	16	23
Venezuela	1	3	3	1	2	8	9	5	13	2	3	6	8	13	22	13
Uruguay	0	3	4	1	2	3	1	3	4	5	7	9	8	14	20	12
Jamaica	6	3	1	2	5	2	2	9	8	8	9	5	3	4	11	11
Guatemala	1	1	1	1	2	2	2	2	5	7	8	9	11	4	5	5
Haiti	0	0	4	0	0	1	0	0	2	3	3	12	7	6	9	9
Ecuador	1	0	0	1	2	5	4	2	3	0	5	4	6	8	7	6
Costa Rica	0	2	2	1	0	1	2	3	2	5	4	2	4	9	5	7
Nicaragua	1	0	1	1	4	5	3	2	3	2	2	3	4	4	3	5
El Salvador	1	0	0	2	2	1	5	1	1	0	1	1	4	3	9	5
Bolivia	1	1	0	1	4	2	2	5	1	1	1	3	1	4	2	6
Panama	0	1	1	1	1	1	4	0	3	2	1	3	1	3	5	5
Trinidad and Tobago	1	1	2	0	3	3	2	1	2	2	2	1	2	2	5	3
Honduras	1	0	2	1	1	1	3	3	1	1	2	2	2	0	1	4
Paraguay	0	0	0	0	1	0	0	2	1	2	0	0	1	3	5	4
Barbados	0	0	0	1	0	0	2	0	1	0	3	2	1	0	4	2
Suriname	0	0	0	0	0	1	0	1	2	2	2	1	2	2	0	2
Guyana	0	1	0	0	0	0	1	0	1	2	3	2	1	0	1	0
Saint Lucia	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Saint Vincent and the Grenadines	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0
Bahamas	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Dominica	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Dominican Republic	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Belize	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Saint Kitts and Nevis	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Antigua and Barbuda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2) Responsiveness

The behavior of individuals, communities, and populations is one of the key decisive health factors. Bunker[5] estimated that eliminating inequalities in healthcare could increase the life expectancy of the underprivileged by up to nine years and, if possible, that eliminating all life habits that are detrimental to the health of individuals would mean an additional gain of 2.5 years. Practice guidelines strengthen the effective responsiveness of healthcare systems, especially when it comes to the delivery of health services and the efficiency financing of healthcare system operations. This feature is exemplified by the World Health Organization's or the UK National Institute for Health and Care Excellence's practice-guideline development experiences, in the clinical and the public-health aspects, which have demonstrated the relevance of evidence in the decision-making process of healthcare systems in terms of implementing cost-effective technologies, interventions, and strategies[9,15,16,18].

Practice guidelines have developed an educational culture in the critical consumption of literature by decision-makers and healthcare professionals. There is significant evidence that – given the proper focus and appropriate conditions –, healthcare professionals, services, or even government could deliver services and interventions to individuals, communities, or populations in order to change health-related behaviors, reduce risk, and decrease morbidity and mortality levels[15]. There is also a growing number of health programs and public-health strategies that adopt the evidence-informed generation of scientific evidence (randomized clinical trials, systematic reviews, and clinical-practice guidelines) as a key precept of their validity and reproducibility[16]. Over the last few years, the Pan American Health Organization / World Health Organization have bolstered the capabilities to develop and standardize evidence-informed public-health programs.

3) Institutional Governance

Practice guidelines are tools that help strengthen institutions in their ability to make decisions. Likewise, when implementing them, practice guidelines help monitor health service delivery processes and reduce the informational asymmetry among the various healthcare system players, which strengthens accountability processes. The capabilities that reinforce institutional governance in the development, use, and implementation of practice guidelines[10] can be summarized thusly:

- Foster innovation and deploy evidence-informed clinical practices;
- Generate a sense of responsibility, risk transfer, and accountability through the proposed standardization and proper measurement of clinical outcomes;
- Coordinate efforts to achieve improvements in the quality of health services;
- Reduce bad clinical practices;
- Structure the delivery of health services and, therefore, contribute to the adoption of healthcare models at the national, regional, or local level, thereby integrating healthcare disciplines and professionals.

4. Research-Generating Element and Its Use in Key Parts of the System

Practice guidelines have become an indispensable element for the implementation of healthcare models in different countries. Some countries incorporate evidence-informed risk management processes into the healthcare model implementation plan to ensure the effectiveness

of health interventions[17]. In other countries, healthcare models based on the end-to-end delivery of health services and incorporation of healthcare roadmaps have been proposed, whose relevant input in the definition and standardization of healthcare practices are the guidelines[11,13,14,25].

Other processes that have incorporated practice guidelines and their recommendations have been the inclusion of new technologies and devices in the benefit plan of different countries as well as starting and market price regulation processes for different technologies. For this reason, it is relevant to continue the process of developing and updating practice guidelines and their recommendations as benefit plan update mechanisms – it must be clarified that this is not the only source of information or decision-making mechanism available for this process[14]. Another relevant aspect, for which there is little evidence, is the effect of practice guidelines on closing the access, utilization, and quality gaps among the different population groups. We hope that, in the medium and long terms, they become equity-generating elements provided their implementation is effectively guaranteed[11,13]. This field must be the object of further research.

Findings

The development, validation and implementation of practice guidelines have had a major impact on the structure and organization of healthcare systems and services in Latin American and Caribbean countries. Policymaking and the creating of institutions that ensure their development, follow-up, implementation, and update would make you think that countries have tries to generate valid scientific evidence for the healthcare-related decision-making process. It is worth noting that the development of research processes that help determine the actual impact of these processes on the health results of populations, the acceptability and quality of health services, and the establishment of governance in the healthcare industry of different countries must be empowered.

References

1. Álvarez-Vargas ML, Galvez-Olortegui JK, Galvez-Olortegui TV, Sosa-Rosado JM, Camacho-Saavedra LA. Revisión de las guías actuales de hipertensión arterial. Medwave 2015;15(9):e6290.

2. Bero L, Rennie D. The Cochrane Collaboration: preparing, maintaining, and disseminating systematic reviews of the effects of health care. JAMA. 1995; 274 (24): 1935–38.

3. Brouwers M, Kho ME, Browman GP, Burgers JS, Cluzeau F, Feder G, et al. AGREE Next Steps Consortium. AGREE II: Advancing guideline development, reporting and evaluation in healthcare. Can Med Assoc J. 2010 [retrieved: May 6, 2016];182(18):E839-42. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3001530/pdf/182e839.pdf

4. Brozek JL, Akl EA, Compalati E, Kreis J, Terracciano L, Fiocchi A, et al., GRADE Working Group. Grading quality of evidence and strength of recommendations in clinical practice guidelines part 3 of 3. The GRADE approach to developing recommendations. Allergy. 2011;66(5):588-95.

5. Bunker J. Medicine matters after all: measuring the benefits of medical care, a healthy lifestyle, and a just social environment. London: Stationery Office; 2001. (Nuffield Trust Series, 15).

6. Committee on Standards for Developing Trustworthy Clinical Practice Guidelines - Institute of Medicine. Washington DC: National Academies; 2011.

7. Dalton JE1, Zidar DA, Udeh BL, Patel MR, Schold JD, Dawson NV. Practice variation among hospitals in revascularization therapy and its association with procedure-related mortality. Med Care. 2016 Apr 5. [Epub ahead of print]

8. Guyatt GH, Oxman AD, Vist GE, Kunz R, Falck-Ytter Y, Alonso-Coello P, Schünemann HJ, GRADE Working Group. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. BMJ. 2008;336(7650):924-6.

9. Jepson R, Harris F, MacGillivray S, Kearney N, Rowa-Dewar N. A review of the effectiveness of interventions, approaches

and models at individual, community and population level that are aimed at changing health outcomes through changing knowledge attitudes and behaviour. Stirling, UK: National Institute for Health and Clinical Excellence; 2006.

10. Brazilian Department of Health. Política Nacional de Gestão de Tecnologias em Saúde. Brasília (DF); 2010. [retrieved: May 6, 2016]. Available at: http://bvsms.saude.gov.br/bvs/publicacoes/politica_nacional_gestao_tecnologias_saude.pdf

11. Colombian Department of Health and Social Protection. Política Integral de Atención en Salud. Un sistema de salud al servicio de la gente. Colombia; 2016. [retrieved: May 6, 2016]. Available at: https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/DE/modelo-pais-2016.pdf

12. Colombian Department of Health and Social Protection. Resolution 2003 of 2014. Procedimientos y condiciones de inscripción de los Prestadores de Servicios de Salud y de habilitación de servicios de salud. Colombia; 2014.

13. Chilean Department of Health, Office of Healthcare Networks, Primary Healthcare Division. En el camino a centro de salud familiar. Chile; 2008 [retrieved: May 6, 2016]. Available at: http://www.bibliotecaminsal.cl/wp/wp-content/uploads/2016/03/En-el-Camino-a-Centro-de-Salud-Familiar.pdf

14. Chilean Department of Health. Pauta para la elaboración, aplicación y evaluación de guías de práctica clínica Unidad de Evaluación de Tecnologías de Salud ETESA. Santiago, Chile; 2002.

15. NICE. Behaviour change at population, community and individual levels. NICE public health guidance no. 6. London: National Institute for Health and Clinical Excellence; 2007. (NICE public health guidance. 6) [retrieved: May 6, 2016]. Available at: https://www.nice.org.uk/guidance/ph6

16. NICE. Methods for the development of NICE public health guidance, 2nd ed. London: National Institute for Health and Clinical Excellence; 2009.

17. NSW Health Department. A framework for building capacity to improve health. Gladsville, Australia: New South Wales Health Department; 2001.

18. World Health Organization. Manual para la elaboración de directrices. 2nd ed. Geneva; 2015.

19. Ortiz, Z. ¿Qué son las revisiones sistemáticas? Buenos Aires: CIE. Academia Nacional de Medicina; 2005. [retrieved: May 6, 2016]. Available at: http://www.epidemiologia.anm.edu.ar/pdf/publicaciones_cie/2005/Que_son_revisiones_sistematicas_2005.pdf

20. Pantoja T, Valenzuela L, Léniz J, Castañón C. Clinical practice guidelines in the Chilean health sector reform: a critical assessment of their quality. Rev Med Chil.2012;140(11):1391-1400.

21. Ronsoni R M, Pereira CC, Stein AT, Osanai MH, Machado CJ. Evaluation of eight Clinical Protocols and Therapeutic Guidelines under the Brazilian Ministry of Health using the AGREE II instrument: a pilot study. Cad Saude Publica. 2015;31(6):1157-62.

22. Saavedra-Salinas MÁ, Barrera Cruz A, Cabral Castañeda AR, Jara Quezada LJ, Arce-Salinas CA, Álvarez Nemegyei J, et al. Clinical practice guidelines for the management of pregnancy in women with autoimmune rheumatic diseases of the Mexican College of Rheumatology. Part I. Reumatol Clin. 2015;11(5):295-304.

23. Schünemann HJ, Mustafa R, Brozek J, Santesso N, Alonso-Coello P, Guyatt G, et al., GRADE Working Group. Development of the GRADE Evidence to Decision (EtD) frameworks for tests in clinical practice and public health. J Clin Epidemiol. 2016 pii: S0895-4356(16)00136-0

24. Mexican Department of Health. Manual metodológico para la integración de guías de práctica clínica de enfermería en el Sistema Nacional de Salud. Mexico; 2013

25. Ubel, P.A. Pricing life: Why it´s time for health care rationing. Cambridge, Massachusetts: The MIT; 2000.

Relationship between evidence based medicine and journalism

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Abstract

In this work we analyze changes in the medical field that interrelate with health journalism taking as a reference the Social Studies of Science and Technology (SSST). Our focus is the Evidence-Based Medicine (EBM), a set of practices in which clinical studies based on population samples are used for decision making in the medical field. EBM has been incorporated globally, including in Brazil, as part of medical practices, public policies, organizational management and other health frameworks. EBM practices go beyond the production and use of scientific knowledge in medicine. It reaches also activities for knowledge popularization about health and that includes journalism as we could observe in this study. Through interviews, we analyze work processes of journalists to identify relations with the changes brought by EBM. In our analyses, journalism contributes to the public acknowledgement of EBM practices, to comprehend its rationality and also to a critical view on how this knowledge has been built.

Keywords: science journalism. evidence-based medicine. medical journalism.

Introduction

In Evidence-Based Medicine (MBE), surveys based on population samples are selected based on methodological criteria in health databases, seeking to answer a clinical or research problem. MBE takes into consideration up-to-date available researches favoring studies in accordance with a hierarchy in which systematic reviews and meta-analyses are the most important research types, followed by randomized, double-blind clinical trials and other studies.[III] Works selected will show evidence briefs for policy that will subsidize analysis and decision-making for clinical practice, collective actions and other situations. In principle, such measures should include the involvement of the patient or population concerned. Thus, as MBE premise, experience throughout the health professional career is not initially the most important criterion for decision-making[1,8].

Practices that involve MBE have been adopted at a global level with records in the medical literature since 1990's from Canada, United States and United Kingdom. MBE arises as a movement from the clinical epidemiology to

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[III] Schwitzer G. Medical Research: A guide for reporting on studies. Columbia: Center For Excellence In Health Care Journalism And The Association Of Health Care Journalists, 2010, p. 65.

an intervention program in the medical practice that associates research to decision-making.

MBE has developed dynamically, procedurally and non-linearly, and firmly established its ideology from force disputes, set itself up as a social movement, in which new actors emerged, from patients to activists, including new professions and organizations that base their practices in evidence[15]. This movement has been guiding from the management of healthcare institutions to public policies and behaviors with each of us, patients in doctors' offices, and users of health systems. The change brought by MBE impacts the way we see health. Hence the importance to follow this process while it is also consolidated in Brazil.

Communication plays an important role in the establishment of MBE as it is intrinsic to science, fundamental in the relationship between peers, between communities and individuals in health promotion[4]. Its relevance is mainly in the dynamics of elements of the so-called scientific culture, in which knowledge produced in science is part of daily life, affects people and how they relate to the world[20].

Here we turn specifically to journalism, one of the activities of media communication that participates in the dynamics of accumulation of knowledge about health in common sense. We take into account routines that organize the journalistic production since they have weight in the generation of the news according to the studies of newsmaking[21]. These conventions are established in a way that defines "what is news", enabling the processes that determine which sources will be heard (people or institutions that originate the information) and how the content will be elaborated. These are routines that allow us to deal with the organizational and productive issues of journalism.

Thus, this study aims to analyze the interrelationships between MBE and journalism. The purpose is, therefore, analyze specifically the presence of MBE precepts in journalistic production focusing on health.

Therefore, we adopted the perspective of the Social Studies of Science and Technology (ESCT). In the ESCT, science is also viewed from the point of view of its interests and setbacks which may show technical and social processes that are not usually presented, but have wider social implications[IV]. Thus, this work allows analyzing the construction of knowledge in MBE observing elements that are part of the relations with science[11] and the paths that cross with journalism.

We developed a qualitative research, through interviews with journalists of representative vehicles of national circulation. Here we present part of the results of a Master's survey[V] completed in 2013 in which six individual interviews were conducted. In general, we observe that the work of journalists in the coverage of health issues is also permeated by the rationality advocated by MBE. There is greater influence in some processes of news production, such as the selection of guidelines and less influence in others, as in the selection of specialized sources for interviews. We can observe, above all, that new configurations are forming in health journalism not only in the same sense of MBE proposals, but also in the formation of a critical posture of journalists in relation to these practices as analyzed below.

[IV] Costa MC, Spiess MR. O que as controvérsias científicas podem nos dizer sobre a proibição do fumo? Jornal da Unicamp 2011 dez;p. 2.

[V] Santos PA. A pauta é saúde: uma análise da influência da medicina baseada em evidências no jornalismo. [Master's thesis]. Campinas: Universidade Estadual de Campinas; 2013.

Survey with journalists

In this study, we contacted journalists who work in the coverage of health researches. For the interviews, inclusion criteria were professionals working in the city of São Paulo in print newspapers and magazines, major media outlets and health-specialized media. According to Flick[5], the proposal was to search typical cases to study the phenomenon.

Eleven professionals, reporters or editors, were contacted by telephone or e-mail and six accepted to participate in the study. With their identities preserved, the professionals granted interviews in the offices of their respective news vehicles or in their residences, totaling 7h40 of recordings from November 2012 to March 2013. The interest of the survey was not to bring a representative sample, but to present perspectives of this profile of journalists.

The answers obtained relate to the values and meanings that these professionals attribute to situations of their personal experience, allowing the analysis of the presence, absence and, to different degrees, applicability of MBE precepts in journalistic practice.

The production of data was guided by an in-depth interview based on a semi-structured questionnaire with reference to the literature on journalism and health[2,15,16, VI].

With a script of the interviews, it was possible to deepen in specific questions according to the case of each subject, starting from the large areas of questions: (a) identification of MBE precepts (statistical base, conflicts of interest, results, risk/benefit); (b) the use of criteria to define agenda based on MBE study types; (c) use of information sources or other resources related to MBE; (d) influence of MBE in journalistic routine; (e) aspects of the construction of scientific knowledge; (f) professional profile; and (g) propositions for health journalism.

The term "evidence-based medicine" was not mentioned to the interviewees at the first contact, nor at the first questions. The hypothesis was that this omission would not harm the analysis and would avoid confusion with other concepts, since the idea was not to explain in the interviews the MBE reasoning, but to analyze the perception of the subject by the journalists.

After complete interviews and transcriptions of the recordings, the process of material analysis began. The first step was the open coding of analysis line by line, verifying the presence of previously defined concepts to be observed in the research and others that appeared during the reading and re-reading of the material. From that, it was made a categorization with grouping of concepts[17].

Following the method of interpretation of meanings, we grouped the research material from common questions that appeared among the interviews. In this step, it was possible to verify a relationship between the testimonies according to the in-depth view of the MBE questions, the experience in covering health issues and the career time. In addition, we observed a deviant testimony, that is, that is not related to any of the other points common among the other individuals[12].

Thus, the reports were grouped based on the relationship between their ideas, regardless of the age of the interviewees, type of vehicle and career times. Therefore, three segments emerged, as per Table 1.

[VI] Kaiser Family Foundation / Association of Health Care Journalists. Survey of AHCJ Members. Menlo Park; 2009, p. 21.

Table 1. Characteristics of interviews conducted with journalists.
Source: Prepared by the author

	Segment 1 2 interviews: B and F	Segment 2 3 interviews: A, C, E	Segment 3 1 interview: D
Training time	Up to 7 years	From 7 to 30 years	Above 30 years
Activity in journalism in health	Up to 7 years	From 3 to 15 years	Above 5 years
Discussion of MBE questions	Less emphasis	Greater emphasis	Greater emphasis

In Gibbs[7] we have seen that qualitative research is an interpretation of what interviewees say and do, trying to portray as realistically as possible what has been said or done. With this orientation, we analyzed properties and dimensions of the categories presented in the testimonies, their meanings, common points, variations and deviations that appeared among the testimonies. Based on reports grouped by segments, we elaborated axes of interpretation and analysis, as summarized in Table 2.

Table 2. Comparison between segments and in relation to MBE premises.
Source: Prepared by the author

Segment	Criteria for guidelines	Selection of sources	MBE Terminology
1	Choices similar to MBE premises	Selection of sources not exclusively from studies of evidences	Not part of the speech or presented less clearly in interviews
2	Choices similar to MBE premises	Selection of sources not exclusively from studies of evidences, but mentions greater variety of sources	Appears more clearly in speeches Vision that MBE influences on journalism, with no impact on health in Brazil yet Perception of positive and negative aspects of MBE
3	Choices similar to MBE premises	Selection of sources not exclusively from studies of evidences, but mentions greater concern with sources selection criteria	Differentiation between types of studies appears less clearly on the speech Shows positive aspects and gaps of MBE Shows that MBE has influence on journalism, but lacks critical view on these practices Declares “living” with MBE despite identifying limitations
Examples of MBE premises noted	It follows a hierarchy in which systematic reviews and meta-analyzes are more important researches followed by randomized double-blind clinical trials and other studies	It follows methodological criteria for the search of studies that respond to a clinical or research problem The result respond to the research question in the form of mathematical estimates	Types of studies (systematic reviews, meta-analyzes, etc.) Levels of studies evidences (as a golden standard for randomized double-blind clinical trials)

The general idea of the MBE is known to the journalists interviewed in this survey. More experienced professionals have a more in-depth and critical view of MBE while a less tense attitude towards the subject prevails among beginners, as if it were a natural part of the journalistic routine.

When selecting themes for the journalistic agendas, the criteria used in the three interviewee segments are similar to the best evidence assumptions according to MBE (meta-analyses, clinical trials, etc.). However, in the three groups, the selection of sources that will help to establish the agenda does not correspond exclusively to evidence studies, being professionals in the area in question, scientific publications or even journalistic sources. In the first, the interviews point to international media, universities, renowned journals and scientific entities as sources. In the second segment of interviews, besides the sources mentioned in the previous grouping, there was a greater variety of options, such as competing websites, reader's tips, contacts with institutions such as hospitals, and mention to the importance of searching for sources in other regions besides southeastern Brazil. In the third, in addition to variety, there is a mention to caution to select sources by checking the specialist's curriculum, his area of study, among other observations.

Regarding the use of MBE terminology and premises, they did not appear or were not clear in the first segment. The second segment used MBE terminology and premises, as observed in the interview A:

> *"We focus on the most statistically significant researches that have more volunteers in the case of epidemiological researches or research that will test a new drug. The more people, the higher the sample quality... Double-blind, randomized... we search for all of it." (interview A)*

The second segment also expressed that MBE influences journalism, the Internet has contributed to the access to a diversity of sources and the formation of a more critical sense, as reported in interview E:

> *"... until very recently, it was enough to be a guy from USP, an expert, who you completely trusted (...) it was a naïve coverage of health, not considering the game of interests that exists" (interview E).*

However, the second segment reports that MBE does not yet impact health policies in Brazil, nor is it present in the discourse of sources when consulted for journalistic articles. In addition, this segment demonstrated the perception of positive and negative aspects of MBE, for example, regarding patient/population participation in decisions based on evidence. Regarding both issues, they are visions that approach the ESCT perspective regarding MBE[18,19] and, as the interviewees also stated, patients have been more spectators than actors and that, despite the attempt to emphasize a more equitable, less authoritarian relationship, the objectivity of the procedures in EBM continues to limit the space for the patients' participation in their health trajectory.

The third segment clearly presents the differentiation between MBE study types, emphasizes selection criteria for selecting agenda, such as population study, less relevance of clinical trials in the initial phases. It shows that MBE is part of their work routine and that they came to know about the different types of studies throughout their experience, attending medical conferences, for example. It asserts that there is influence in journalism, but a critical view of these practices is lacking. This statement brings the following reflection: at the same time that society recognizes the legitimacy of medical practice

and research, there are interests that outline the innumerable norms that delimit this field. This legitimacy is recognized representatively, does not mean a consensus, so much so that traditional medicine coexists with activities that also motivate medical practice and research, such as integrative medicine (in reference to meditation practices, acupuncture, etc.) that is used in health systems and is also the subject of researches.

According to social studies of science, the critical view - also present in this interview - proposes to recognize that science is a social institution that has its norms, values, pressures, interests that are imposed on scientists, physicians and other professionals and their decisions. Specifically in medicine, the "scientificization" and standardization of practices have been permanent throughout its history in the search for legitimacy and autonomy of the medical profession. They are measures that favor the identity of the profession according to Freidson[6], but do not impact on a radical change of behavior. There is a continuous process of learning to know, ignore, adapt and implement science and techniques in several ways, that is, there is a malleability, such as discussed by Timmermans and Berg[18]. Finally, the medical clinic uses what is available at the moment of the decision, which is possible in each context.

In short, MBE has been building new forms of information and knowledge production that are permeating the journalistic practice. Interviewees with longer experience emphasize the need to keep the critical journalistic function on the horizon while using MBE for information. We therefore observe visions that go beyond the function of communication as a promoter of health habits as proposed by Corcoran[4]. They also show us the possibility of going beyond the role of journalism as mediator according to the vision of Kunczik[10].

However, the system of interdependencies in journalistic activity, the practical pressures, and the specificities of its narrative[13] impose limitations on possible new productions using EBM. It also restricts innovations to the still prevailing view of popularization of science that constantly reaffirms an authority for scientific knowledge[9] and places it beyond the reach of what journalistic work can do. It is seen as incapable, which simplifies, distorts facts, etc., but this view of popularization is also simplified and has not generated alternatives or positive impact.

Final considerations

MBE has been consolidating itself as a set of practices that support health activities based on the systematization of available research results. Directly or indirectly, we are all participants in the construction of this movement, and communication activities such as journalism are included in this panorama.

When we look at MBE's interrelationships with journalism, we identify MBE precepts present mainly in the search for agendas for the articles. The degree of evidence, including population coverage and research design, are some of the criteria observed by journalists in the choice of studies that will be used in their articles that contribute to the recognition of MBE practices.

In times of easier access to information through the Web, it is worth emphasizing that researches can be used more easily by journalists, but it is also necessary to differentiate the relevance among the available works, a need corroborated by more experienced professionals heard in this search.

At the same time, in these interviews, we realize that in the routine of these journalists there is relevance for bioethical and moral issues, conflicts of interest that involve medical practice

and research. These are approaches that should be increasingly present in journalism given the complexity and increasingly facilitated access to health information and communication systems. Likewise, the gaps in evidence-based practices are taken into account by these professionals in health coverage. There is a more critical view by those with more career time.

In the analysis presented herein, the idea is not only to validate or question the legitimacy of MBE, but to multiply the look on what is this rationality and its role. Since "science-based" decisions have an impact on the life of every citizen, it is also up to society to participate in the construction of this knowledge (although this is a premise of MBE, it does not materialize effectively as we observed), from the recognition and critical posture regarding these practices. In this sense, the role of journalism goes beyond informing to promote health, it is more than the possibility of mediating and making relationships between different forms of knowledge such as science.

The tendency is for the health journalist to become a professional who is increasingly aware of the specificities of this area, the concepts and the relationships that are established within it. In this perspective, it also seems possible that there are more opportunities to open the black boxes of science and health. Scientists, physicians, administrators, patients, hospitals, civil institutions, international agencies are in permanent negotiation, they are actors in the contest of strength who will continue to reposition themselves in this entanglement upon the definition of behaviors being accompanied by journalism.

As the journalists we talked to have pointed out, the trend is also that MBE will continue to influence their routines. Those who arrive after these changes should look at these influences critically. New demands arise for health coverage. As in the reflection of Collins and Pinch[3]: "(...) the reality of nature ends up being established in the sphere of human argumentation." Therefore, the review of our practices should be a constant task, something that we hope to have contributed with this study. Further research on these new relationships is possible.

Bibliographical References

1. Atallah A. Medicina Baseada em Evidências: o elo entre a boa ciência e a prática clínica. In: Minayo M, Deslandes S, organizadores. Caminhos do pensamento: epistemologia e método. Rio de Janeiro: FIOCRUZ; 2008. p.325-343. [Visited on Mar 18, 2016]. Available at: http://books.scielo.org/id/24sgf

2. Carman KL, Maurer M, Mathews Yegian J, Dardess P, McGee J, Evers M, Marlo KO. Evidence that consumers are skeptical about evidence-based health care. Health Aff. 2010; 29(7):1400–6.

3. Collins H, Pinch T. O Golem: o que você deveria saber sobre ciência. São Paulo: Unesp; 2003.

4. Corcoran N, organizador. Comunicação em saúde: estratégias para promoção de saúde. São Paulo: Roca; 2010.

5. Flick U. Desenho da pesquisa qualitativa. Porto Alegre: Artmed; 2009.

6. Freidson E. Profissão médica: um estudo de sociologia do conhecimento aplicado. São Paulo: Unesp; Porto Alegre: Sindicato Dos Médicos; 2009.

7. Gibbs G. Análise de dados qualitativos. Porto Alegre: Artmed; 2009.

8. Greenhalph T. Como ler artigos científicos: fundamentos da medicina baseada em evidências. 3.ed. Porto Alegre: Artmed; 2008.

9. Hilgartner S. The dominant view of popularization: conceptual problems, political uses. Soc Stud Sci. 1990;20(3):519-39.

10. Kunczik M. Conceitos de jornalismo, Norte e Sul : manual de comunicação. São Paulo: Edusp; 1997.

11. Latour B. Ciência em ação: como seguir cientistas e engenheiros sociedade afora. São Paulo: UNESP; 2000.

12. Minayo M, Deslandes S, organizadores. Pesquisa social: teoria, método e criatividade. 25. ed. Petrópolis: Vozes; 2007.
13. Neveu E. Sociologia do jornalismo. São Paulo: Loyola; 2006.
14. Pappas C. Hospital librarians' perceptions related to evidence-based health care. J Med Libr Assoc. 2008;96(3):235-8.
15. Pope C. Resisting evidence: the study of evidence-based medicine as a contemporary social movement. Health (Lond.). 2003;7(3):267-282.
16. Schwitzer G. How do US journalists cover treatments, tests, products, and procedures?: an evaluation of 500 stories. PloS Med. 2008;5(5):700-3.
17. Strauss A, Corbin J. Pesquisa qualitativa: técnicas e procedimentos para o desenvolvimento de teoria fundamentada. 2. ed. Porto Alegre: Artmed; 2008.
18. Timmermans S, Berg M. The gold standard: the challenge of evidence-based medicine and standardization in health care. Philadelphia: Temple University; 2003.
19. Tonelli MR. The philosophical limits of evidence-based medicine. Acad Med. 1998;73(12):1234-40.
20. Vogt C. The spiral of scientific culture and cultural well-being: Brazil and Ibero-America. Public Understanding of Science. 2012;21(1):4-16.
21. Wolf M. Teorias das comunicações de massa. 4. ed. São Paulo: WMF Martins Fontes; 2009.

Policy options for controlling type 2 diabetes mellitus in the city of Franco da Rocha-SP

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Abstract

It is estimated that diabetes mellitus prevalence in Brazilian population is about 8%, and around 85 to 90% of all cases are type 2 diabetes mellitus (T2DM). The disease arises insidiously having heredity, obesity, inadequate dietary habits, stress and sedentary lifestyle as predisposing factors. Economic and social burden of the disease are substantial due to acute and chronic complications, hospitalizations, disablements and premature deaths. Diabetes is considered as a sensitive condition to primary health care, being health teams in charge of improving patients' compliance to treatment, including lifestyle changes. In Franco da Rocha, a city in São Paulo State, premature deaths regarding diabetes have increased in the last years, more frequently amongst men. A Policy Brief was elaborated with the aim to support the formulation of a public policy to control T2DM in that city. Following the proposed methodology of Evidence Informed Policy Network (EVIPNet) five options to manage T2DM were identified, from the search in the main scientific database for systematic reviews. These options, as well as their barriers to implement actions were discussed with the health team.

Keywords: Type 2 Diabetes Mellitus, Evidence briefs for policy, Public health policies

Diabetes mellitus: a priority health issue

Diabetes mellitus is a chronic disease characterized by metabolic disorders due to a change in the production or release of insulin by the beta cells, tissues or the inability to utilize glucose. The disease is classified in the types 1 and 2, according to their different pathophysiological mechanisms. Type 2 Diabetes mellitus (T2DM) is a condition, which occurs despite the availability of insulin, being more common in older people[13].

The estimated prevalence of diabetes mellitus in the Brazilian population is around 8%. The T2DM corresponds to approximately 85-90% of cases of diabetes, arises insidiously and its predisposing factors is heredity, obesity, poor eating habits, stress and a sedentary lifestyle. The T2DM generates an important economic and social impact, due to acute and chronic complications, hospitalizations, disability and premature death[7].

The disease requires permanent care for their control, especially the adoption of healthy

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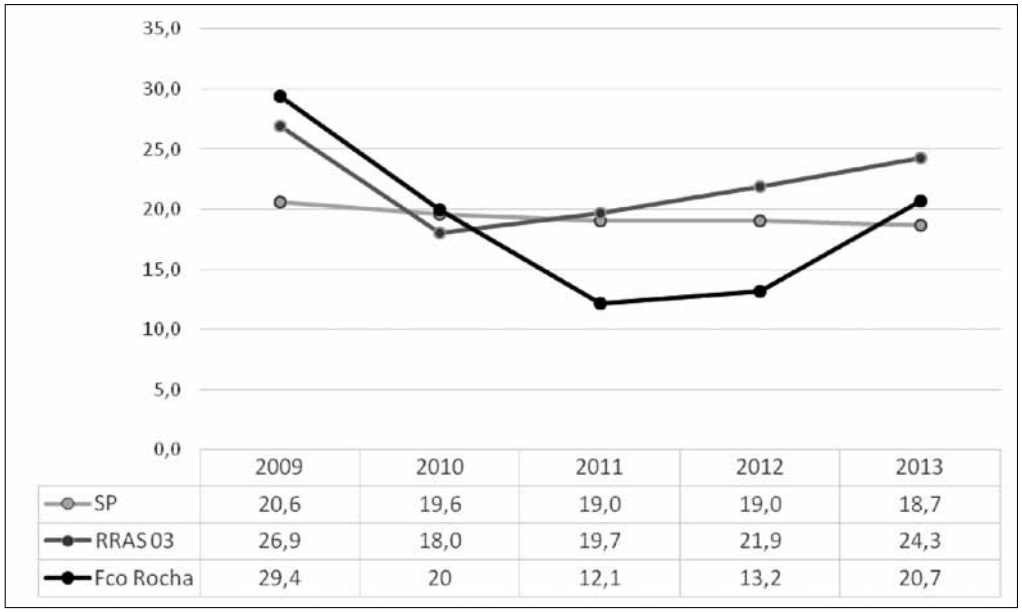
lifestyle habits such as physical activity, proper nutrition, decrease or abandonment of tobacco and alcohol, and glucose self-monitoring[7,11,16]. For patients who fail to achieve glycemic control through the above measures, it is introduced drug treatment[7,11]. Regardless of the proposed treatment, it is necessary to deal with psychological, social and economic factors of patients, which implies in conducting the case by an interdisciplinary team[7,16].

Diagnosis of the health condition of the population of the city of Franco da Rocha, conducted in 2014 through improvements of the Health Institute has identified chronic diseases as a priority health problem, including diabetes mellitus[14]. Analysis of early mortality from diabetes in the city of Franco da Rocha (deaths in people under 60 years) from 2009 to 2013, showed that there was significant reduction in the first three years of the period followed by a gradual increase from 2012. In 2013, the proportion of early deaths in the city of Franco da Rocha exceeded the values of the state of São Paulo, although it is still below the values given by the health region in which the municipality is inserted (Figure 1). It was noted that early mortality is much more common among men than women (Figure 2)[VIII].

Figure 1. Early mortality ratio (< 60 years old) due to diabetes mellitus per year. Franco da Rocha, RRAS03 and State of São Paulo, 2009-2013.



	2009	2010	2011	2012	2013
SP	20,6	19,6	19,0	19,0	18,7
RRAS 03	26,9	18,0	19,7	21,9	24,3
Fco Rocha	29,4	20	12,1	13,2	20,7

Source: MS/SVS/CGIAE - Sistema de Informações sobre Mortalidade – SIM.

[VIII] SIM - Mortality Information System. Ministry of Health. Portal da Saúde DATASUS. Informações de Saúde (TABNET). Estatísticas Vitais, s/d. Available at: <http://www2.datasus.gov.br/DATASUS/index.php?area=0205>. Acessado em maio de 2015.

Figure 2. Average mortality by age group (20-59 years old) and gender. Franco da Rocha, São Paulo, 2009-2013.

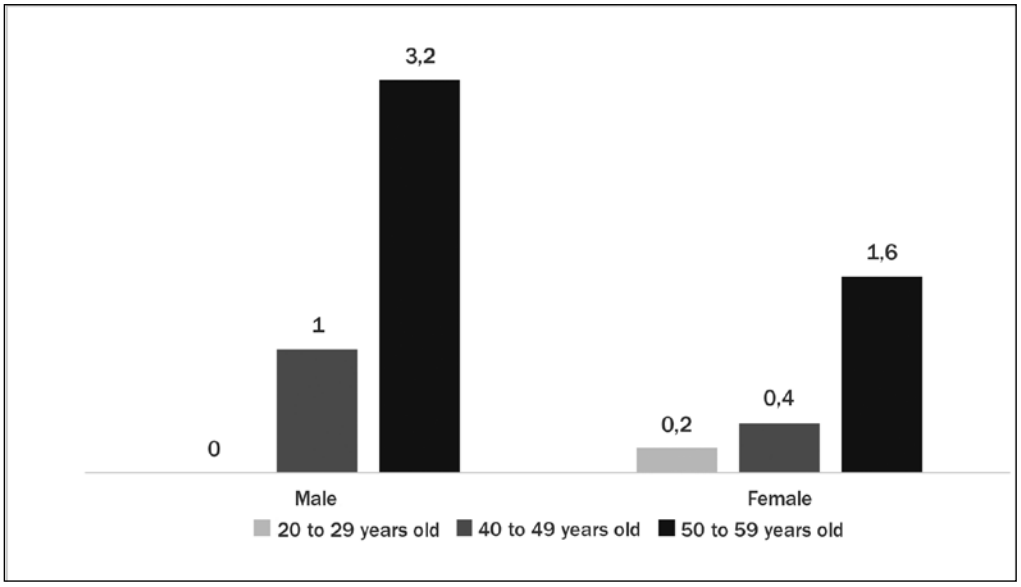


Figure 3. Flowchart of selection process of reviews for analysis.

Considering that diabetes mellitus is a sensitive condition for Primary Care, and that good management can prevent hospitalizations and deaths from complications[11], it was discussed that an evidence briefs for policy might be useful to guide actions to be taken to reduce early mortality due to diabetes in the city of Franco da Rocha.

Purpose

Conduct an evidence briefs for policy with options to control type 2 diabetes mellitus in the city of Franco da Rocha, in order to support the development of public policies based on scientific evidence.

Methods

In order to prepare the evidence brief[IX] the team used as a reference to the methodology of the Evidence Informed Policy Network (EVIPNet)[8], supported by a set of tools developed by the SUPPORT (*SUPporting Policy RELEVANT Reviews and Trials*) project, which aims the development of systematic and transparent processes including the definition of the problem/issue, search for evidence, characterization of options, survey and clarify options for implementation of options and on equity, document drafting and implementation of deliberative dialogue.

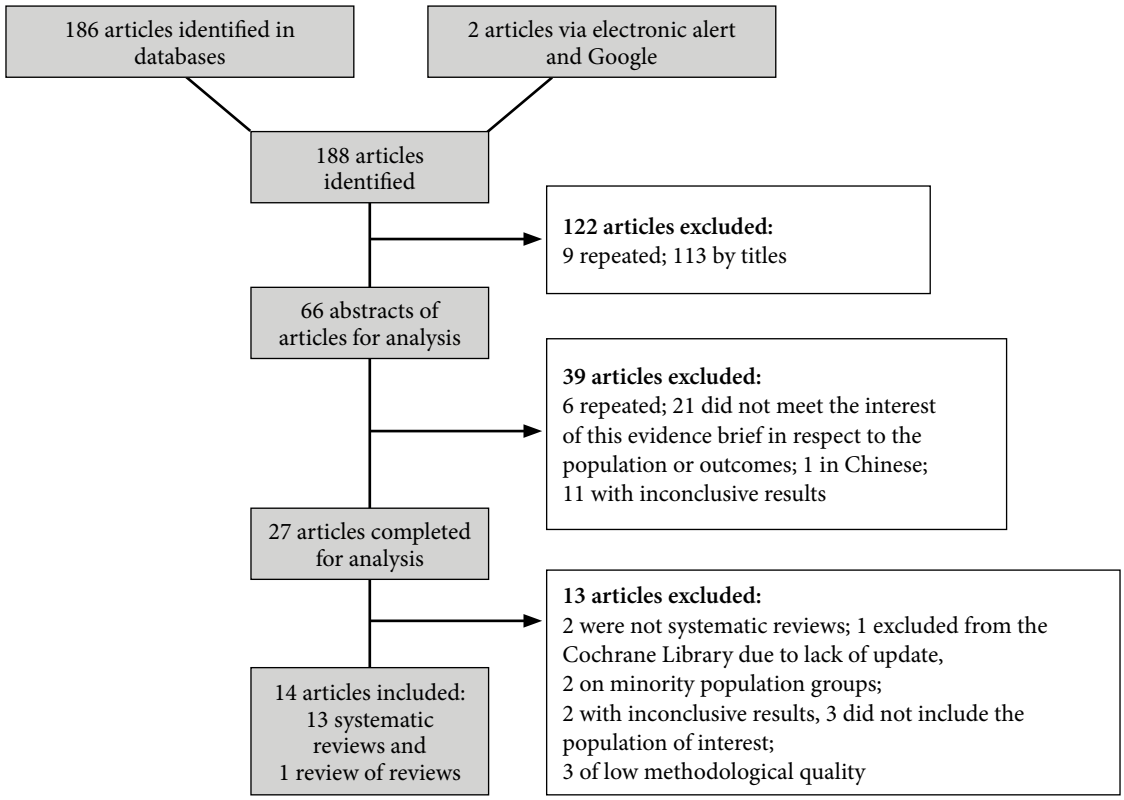
Searches were conducted in the following databases: Virtual Health Library, *Health Systems Evidence* and PubMed. The terms used to perform the search were “diabetes mellitus” and “mortality” in Portuguese, Spanish and English, according to the specificity of each base. The search was conducted on 07/08/2015, without restriction of publication date.

They identified 186 articles in the databases, and an electronically alert and another through the Google search engine. 9 articles were excluded, 113 after reading the titles and 39

[IX] The evidence briefs for policy provides more detailed information about search strategies, deleted articles and results of the reviews analyzed. Available at: http://www.saude.sp.gov.br/resources/instituto-de-saude/homepage/pdfs/sintese_diabetes_2mar2016.pdf

after reading the abstracts. The grounds for exclusion were six repeated articles, twenty-one studies did not meet the interest of this evidence brief in relation to population or outcomes, one article in Chinese, and eleven studies with inconclusive results. Out of 27 articles selected for full reading, two were excluded because they were not systematic reviews, one was no longer available in *Cochrane Library* for lack of updates, two articles on minority population groups were not representative for the reality of the city of Franco da Rocha, two studies have yielded inconclusive results, three did not include the population of interest and three had low methodological quality. Thus, thirteen systematic reviews and a review of systematic reviews were analyzed to identify possible options for a health policy (Figure 3).

Figure 3. Flowchart of selection process of reviews for analysis.



The methodological quality of systematic reviews was evaluated by AMSTAR - *Assessing the methodological quality of systematic reviews* - instrument (ten reviews have contained the score provided by the database *Health System Evidence* and three were evaluated by the authors of the evidence brief)[17].

Considerations on equity and implementation of options, with the presentation of a list of possible barriers and overcoming possibilities

for each option have been prepared from a brainstorming between the components of the setting-up team of the evidence briefs for policy.

The evidence brief with five options for the T2DM control health policy and considerations on equity and implementation were presented and discussed at a meeting of deliberative dialogue, held in the city of Franco da Rocha. The deliberative dialogue is an interaction between researchers, policy makers and other authors interested in a particular subject. It allows research evidence to be considered along with the views, experiences and tacit knowledge of those who will be involved or affected by future decisions related to a high priority issue. Eighteen people participated in the dialogue, including managers and professionals of Primary Care, representatives of the Personal Trainer Centre for Health of São Paulo (CEFOR) and the Council of Municipal Secretaries of São Paulo (COSEMS-SP), researchers, improvers and observers.

Results: options for a health policy

Systematic reviews analyzed allowed the formulation of five options to deal with patients with T2DM: 1) Strengthening strategies for self-management of the patient; 2) Expansion of the Pharmacist function in patient care; 3) Promotion of shared consultations; 4) Modification of patient care through combined interventions; 5) Promote the use of online tools and telephone assistance in glycemic control.

These systematic reviews found that the main outcome of almost every study has been the reduction of glycated hemoglobin, and not mortality. Glycated hemoglobin, glycated hemoglobin or glycohemoglobin (HbA1c) indicates the percentage of hemoglobin that is linked to glucose. It reflects the average blood glucose levels over the past two to three months, and is recommended as a follow-up examination and stratification of metabolic control[11].

The following five options are presented.

Strengthening strategies for self-management of the patient

In this option are discussed education interventions in group and individual to improve adherence to drug treatment, diet changes, physical activity and continuous blood glucose self-monitoring. Interventions aim to involve patients in their own care, promote greater knowledge of the disease, develop skills and confidence.

In four systematic reviews of moderate and high quality was noted that interventions to promote self-management of the patient with education strategies in group or individual, they had no effect in reducing glycated hemoglobin[2,3,12,19]. In two of them, as a side effect, it was noted weight reduction[3,19]. Other findings were a reduction in fasting plasma glucose in groups with more than twelve months of intervention and improvement in lifestyle with greater knowledge about diabetes and self-management skills[19]. It was also reported decreased blood pressure, improved lipid and triglycerides profile in studies involving patients' activation interventions[3].

A review of systematic reviews analyzed twenty-one studies of different interventions involving education and support to patients showed improved results in glycemic control, blood pressure and cholesterol, and reduction on complications of diabetes[21].

A systematic review of moderate quality, which analyzed the glucose monitoring in blood and urine as self-management strategy, has shown that the achievement of monitoring tests alone was not an effective strategy in controlling blood glucose[5].

Some uncertainty as to this option were raised due to the strength of the evidence that was considered moderate for glycated hemoglobin and low for the results related to weight reduction, lowering blood pressure, improved lipid profile, and triglycerides. Most of the studies analyzed had few participants and had little time for intervention, limiting the ability to detect clinically significant damage and long-term benefits[3].

Extension of Pharmacist role in patient care

Pharmacists inserted in multidisciplinary teams or acting as case managers allow counseling interventions, assessment and management of drug treatment, patient self-management, changes in lifestyle, among others[4].

Three systematic reviews of moderate quality found positive results in improving glycosylated hemoglobin associated with programs that insert the pharmacist, either with specific interventions or multidisciplinary team. They were also reported improvements in self-management and self-monitoring of diabetes by patients, and facilitate their communication with health professionals. Interventions that pharmacists could participate in decisions, together with the physician about adjustments or changes in medication showed better results[9,10,22].

Two of these reviews reported that the participation of the pharmacist in the diabetic patient care also resulted in improvement of blood pressure, of lipid profile and reduction of chronic complications[10,22].

In one of the reviews there was the implementation of pharmaceutical care in forty-two hospitals in China by 2009, which proved beneficial in controlling diabetes[9]. In the US, pharmaceutical assisted physicians in the definition of drug treatment, and held individual patient visits[22].

A review of systematic reviews showed results that confirm the importance of the pharmaceutical activities and multidisciplinary team[21].

Promoting shared medical appointment

Shared medical appointment provide a humanized and comprehensive care. In this type of medical appointment, different categories of health professionals are involved in the same environment and can involve educational interventions and strategies to improve self-management, in conjunction with the administration of drugs and efforts to improve the health conditions of the patient.

A systematic review found that moderate quality shared medical appointment improved the glycated hemoglobin and systolic blood pressure of patients with type 2 diabetes mellitus. It was found that the shared medical appointment is more efficient when compared to usual care[6].

However, the procedures of successful groups are not clear in view of the variety of interventions used in shared medical appointment have not been described in the studies[6].

Modification of patient care through combined interventions

This option is suggested to reshape the organization of health care through strategies that use a range of interventions: education and reminders to professionals and patients, information on clinical data to health professionals, feedback summary and audit, promotion of self-management, organizational change, and financial, regulatory and legislative incentives.

A systematic review of moderate quality reported that the education of health professionals, alone or in combination with other interventions,

and self-management of the disease reduced glycated hemoglobin. This reduction was more pronounced with strategies involving education of professionals. [18].

Another systematic review of moderate quality noted that interventions such as education and patient counseling, changes in medical record system, monitoring system organization and reviewing the functions of related professionals, the blood glucose control measures, blood pressure, weight and lipids, resulting in reduction of glycated hemoglobin[15].

Both reviews reported that interventions focused on professional and systems and involving more than a quality improvement strategy resulted in a greater benefit than interventions involving only a single strategy[15,18].

A review of systematic reviews examined eight studies showed results that confirm the effectiveness of multiple intervention approaches[21]. The main uncertainty relates to identify, which combinations of strategies cause greater effect in glycated hemoglobin levels[15,18].

Promoting the use of *online* tools and telephone assistance in glycemic control

Online and telephony tools favor the development of different strategies that can facilitate access to information and interaction between the patient and the health service.

Two systematic reviews of moderate quality reported greater reduction in glycated hemoglobin and improved lipid profile, self-management and patient relationship, and health team when used different combinations of tools[1,20]. Only in one of them, reduction in blood pressure with the use of social networks was reported as an intervention strategy[20].

A review of systematic reviews that analyzed ten studies on the effectiveness of telemedicine showed that the intervention was effective in glycemic control[21].

The authors warn about the possibility of reducing the effectiveness of the strategies over time to use these tools with decreased motivation and enthusiasm of patients[1]. It was also reported the need for more studies that assess interventions with mobile devices[1,20].

Patients and health teams have the ability to exchange information with each other, with similar conditions, since the interventions have potential for global applicability, but reported difficulties in handling and administration of the tools[1,20].

Considerations on Implementation of options

The definition of patient care with T2DM as a priority of the current management of the city of Franco da Rocha is crucial factor for the implementation of the proposed options. In deliberative dialogue[x], after the presentation of the five options possible barriers and facilitators for implementing actions were discussed. It was found that it is important to know the profile of the population, respecting diversity among people, as well as the characterization of patients with T2DM, including an inter-sectorial approach to the problem. Facilitators conditions in the city are teams of the Family Health Strategy (ESF) in basic health units; Centers of Support for Family Health (NASF); Health Academy Program; Health Program in action; distribution of material for self-monitoring of blood glucose and stimulate the realization of group orientation. Regarding professionals, it was discussed that is not enough just to offer courses, but it is also necessary to intensify the ongoing education and spaces for conversations

[x] Deliberative dialogue report is available at: http://www.saude.sp.gov.br/resources/instituto-de-saude/homepage/pdfs/relatorio_dialogodeliberativo_2mar2016.pdf

and discussions about work processes. Another relevant factor is the large number of people who have land lines, mobile devices, computer and internet access. The mobile devices, in particular, are quite often even in the poorest sections of the population, and this option seen as the more feasible to reach the young adult population and workers. The city has only two pharmaceutical working in dispensing medications making it difficult to carry out some activities proposed by the evidence brief.

Considerations on equity of options

Some considerations on the promotion of equity in accordance with the option choice of being deployed are necessary, given the possibility that some groups are not covered by the interventions. The ESF is restricted to residents and do not consider the commercial and industrial areas of the region, so it is important to consider the inclusion of these areas in the serviced territory. Engage companies are a way to approach the basic attention of the male population, pointed out as far from health services. It is also important that the group activities are carried out at various times to meet workers' patients. Eventually, these activities could be carried out in locations closest to the community and ease of access, especially for people with reduced mobility or disability. The local economic reality, where approximately a quarter of the population is in poverty condition, can hinder the user participation in the proposed activities and access to equipment such as computer and telephone, internet network and consequently online tools.

General Considerations

The evidence briefs for policy presented in this article has as limitation the search for systematic reviews in only three scientific literature databases. In addition, the included studies were conducted in countries of high and medium-high income, which can compromise some considerations about the implementation of options in low-income areas.

The main contact in the city occurred with managers and supporters of Primary Care, and there were few meetings, which may have contributed to the reduced compilation of data on the activities already carried out in health services. A more detailed prior knowledge of these activities could have served as an incentive for better use of discussion by all parties.

Nevertheless, this study is an important first step to support the implementation of health actions based on scientific evidence in the city of Franco da Rocha, associated with the empirical knowledge of workers, managers, supporters and decision makers.

Conflicts of Interests: The authors declare have no conflict of interest in preparing this study.

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References

1. Angeles RN, Howard MI, Dolovich L. The effectiveness of web-based tools for improving blood glucose control in patients with diabetes mellitus: a meta-analysis. Can J Diabetes. 2011;35(4):344-52.

2. Asante E. Interventions to promote treatment adherence in type 2 diabetes mellitus. Br J Community Nurs. 2013;18(6):267-74.

3. Bolen SD, Chandar A, Falck-Ytter C, Tyler C, Perzynski AT, Gertz AM, et al. Effectiveness and safety of patient activation

interventions for adults with type 2 diabetes: systematic review, meta-analysis, and meta-regression. J Gen Intern Med. 2014 [accessed on December 17, 2015]; 29(8):1166-76. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4099447/pdf/11606_2014_Article_2855.pdf

4. Conselho Regional de Farmácia de Minas Gerais. A importância do farmacêutico no SUS: suas competências e atribuições nas ações de saúde pública. Belo Horizonte: CRF/MG; 2011. 28p. [accessed on December 17, 2015]. Available at: http://www.crfmg.org.br/externo/profissional_empresa/downloads/2.pdf

5. Coster S, Gulliford MC, Seed PT, Powrie JK, Swaminathan R. Monitoring blood glucose control in diabetes mellitus: a systematic review. Health Technol Assess. 2000 [accessed on December 17, 2015]; 4(12):i-iv, 1-93. Available at: http://www.journalslibrary.nihr.ac.uk/__data/assets/pdf_file/0011/64919/FullReport-hta4120.pdf

6. Edelman D, Gierisch JM, McDuffie JR, Oddone E, Williams JW Jr. Shared medical appointments for patients with diabetes mellitus: a systematic review. J Gen Intern Med. 2015;30(1):99-106.

7. Guidoni CM, Olivera CMX, Freitas O de, Pereira LRL. Assistência ao diabetes no Sistema Único de Saúde: análise do modelo atual. Braz J Pharm Sci. 2009 [accessed on December 17, 2015]; 45(1): 37-48. Available at: http://www.scielo.br/pdf/bjps/v45n1/05.pdf

8. Lavis JN, Oxman AD, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). [accessed on December 18, 2015]. Available at: http://sintese.evipnet.net/livro/ferramentas-support-para-a-elaboracao-de-politicas-de-saude-baseadas-em-evidencias-stp/

9. Li X, Mao M, Ping Q. Effect of pharmaceutical care programs on glycemic control in patients with diabetes mellitus: a meta-analysis of randomized controlled trials. J Pharm Technol. 2010; 26(5):255-63.

10. Lindenmeyer A, Hearnshaw H, Vermeire E, Van Royen P, Wens J, Biot Y. Interventions to improve adherence to medication in people with type 2 diabetes mellitus: a review of the literature on the role of pharmacists. J Clin Pharm Ther. 2006 [accessed on December 18, 2015]; 31(5):409-19. Available at: http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2710.2006.00759.x/epdf

11. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Estratégias para o cuidado da pessoa com doença crônica: diabetes mellitus. Brasília (DF); 2013. 160 p.: il. (Cadernos de Atenção Básica, 36). [accessed on December 18, 2015]. Available at: http://189.28.128.100/dab/docs/portaldab/publicacoes/caderno_36.pdf

12. Pillay J, Armstrong MJ, Butalia S, Donovan LE, Sigal RJ, Vandermeer B, et al. Behavioral Programs for Type 2 Diabetes Mellitus: a systematic review and network meta-analysis. Ann Intern Med. 2015 [accessed on December 18, 2015]; 163(11):848-60. Available at: http://annals.org/article.aspx?articleid=2446188

13. Porth CM, Kunert MP. Fisiopatologia. 6.ed. Mundim FD, tradutor. Rio de Janeiro: Guanabara Koogan; 2004. Chap. 14.

14. Prado M, Alunos do Programa de Aprimoramento Profissional em Saúde Coletiva – Turma 2014. Análise de situação de saúde: município de Franco da Rocha (SP). São Paulo: Instituto de Saúde; 2015. 117p.

15. Renders CM, Valk GD, Griffin SJ, Wagner E, van Eijk JT, Assendelft WJJ. Interventions to improve the management of diabetes mellitus in primary care, outpatient and community settings. Cochrane Database of Systematic Reviews 2000, Issue 4. Art. No.: CD001481. DOI: 10.1002/14651858.CD001481.

16. Santos ECB, Teixeira CRS, Zanetti ML, Santos MA, Pereira MCA. Políticas públicas e direitos dos usuários do Sistema Único de Saúde com diabetes mellitus. Rev. Bras. Enferm. 2011 [accessed on December 18, 2015]; 64(5):952-957. Available at: http://www.scielo.br/pdf/reben/v64n5/a23v64n5.pdf

17. Shea BJ, Grimshaw JM, Wells GA, Boers M, Andersson N, Hamel C, et al. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. BMC Med Res Methodol. 2007 [accessed on December 18, 2015].; 7:10. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1810543/pdf/1471-2288-7-10.pdf

18. Shojania KG, Ranji SR, Shaw LK, Charo LN, Lai JC, Rushakoff RJ, et al. Diabetes Mellitus Care. Vol. 2 of: Shojania KG, McDonald KM, Wachter RM, Owens DK. Closing The Quality Gap: A Critical Analysis of Quality Improvement Strategies. Technical Review 9 (AHRQ Publication, 04-0051-2). Rockville, MD: Agency for Health Care Research and Quality; 2004. [accessed on December 18, 2015]. Available at: http://www.ahrq.gov/downloads/pub/evidence/pdf/qualgap2/qualgap2.pdf

19. Steinsbekk A, Rygg LØ, Lisulo M, Rise MB, Fretheim A. Group based diabetes self-management education compared to routine treatment for people with type 2

diabetes mellitus. A systematic review with meta-analysis. BMC Health Serv Res. 2012 [accessed on December 18, 2015].; 12:213. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3418213/pdf/1472-6963-12-213.pdf

20. Toma T, Athanasiou T, Harling L, Darzi A, Ashrafian H. Online social networking services in the management of patients with diabetes mellitus: systematic review and meta-analysis of randomised controlled trials. Diabetes Res Clin Pract. 2014; 106(2):200-11.

21. Worswick J, Wayne SC, Bennett R, Fiander M, Mayhew A, Weir MC, et al. Improving quality of care for persons with diabetes: an overview of systematic reviews - what does the evidence tell us? Syst Rev. 2013 [accessed on December 20, 2015]; 2:26]. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3667096/pdf/2046-4053-2-26.pdf

22. Wubben D, Vivian E. Effects of pharmacist outpatient interventions on adults with diabetes mellitus: A systematic review. Pharmacotherapy. 2008; 28(4):421-36.

Evidence Briefs for policy on Strategies for Maternal Mortality Reduction in the municipality of Franco da Rocha, São Paulo

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Abstract

Brazil is still far from achieving the Millennium Development Goals undertaken in 1990 to reduce maternal mortality (MM). Currently, in the country about 69 women die per 100 thousand live births, but by the goals of the United Nations, that number should be a maximum of 35 women. In this context, it is possible to emphasize that the main causes of these deaths are hypertension, hemorrhage, and complications of abortion in unsafe conditions and postpartum infections. Moreover, we note high rates of MM in Brazil in remote areas, where access to health networks is almost non-existent and / or precarious. In the city of Franco da Rocha, the high MM rates have been worrying policy makers, especially because it is related to causes considered preventable. This article presents some of the results of a Policy Brief prepared by students of the Professional Program in Public Health at *Instituto de Saúde*, with the support of its Evidence Center, which is part of the Evidence Informed-Policy Network - EVIPNet Brazil in order to support municipal policy makers in Franco da Rocha in decision making for reducing MM.

Keywords: Maternal Mortality, Health Policies, and Evidence Briefs for Policy.

Introduction and Background

The Maternal Mortality (MM) is defined as the death of a woman during pregnancy or within a period of 42 days after the termination of pregnancy, regardless of the duration or location of the pregnancy, due to any cause related to or aggravated by pregnancy or measures in relation to it, but not due to accidental or incidental causes[25].

The number of maternal deaths in a country is an excellent indicator of their social reality, being inversely related to the degree of human development. In this respect, national studies confirm that maternal outcomes are influenced by the conditions of assistance to prenatal and according to recommendations from official agencies that should start early, have universal coverage, be performed periodically, be integrated

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with the other preventive and curative actions and have a minimum number of visits[2].

In order to investigate the causes of MM in Brazil we are based on the indices calculated from the declared MM, obtained from death certificates of the Information System on Mortality and the Live Births Information System, both managed by the Ministry of Health. From the data collected by the health services, it is possible to identify many important aspects to face the MM, as the main causes of death, when they occur and whether they could be avoided.

In this context, the problem of MM in Brazil became relevant because the data available and their analysis indicate that the country is above the target set by the *Millennium Development Goals* for 2015 - the desirable value would be equal to or less than 35 maternal deaths per group of 100,000 live births - stipulated by the United Nations.

The Health Region (RS) of Franco da Rocha (which includes the municipalities of Cajamar, Caieiras, Francisco Morato, Franco da Rocha and Mairiporã) presented in 2010, rate of 71.06 per 100,000 Live Births and in 2013 , 46.37 per 100,000 Live Births. Restricting the view to the city of Franco da Rocha, in consultation with Seade Foundation on the information of the Municipalities of São Paulo, we note that this mortality ratio was 47.87 in 2009, 90.21 in 2010 and 141.18 in 2011. It is noteworthy here that the data for 2012 and 2013 were not available for search (www.imp.sade.gov.br)

In Franco da Rocha, the data also show that the prenatal coverage, with seven or more visits, is falling in the period analyzed (rate of 72% in 2010, 69.7% in 2011, 68% in 2012 and 65.5% in 2013); Also, when compared to the state of São Paulo and the RS of Franco da Rocha, the municipality shows less prenatal coverage. Such data may suggest different causes, such as lower adherence of pregnant women, reduction of teams that provide assistance to women, or even stagnation of services and resources. One aspect worth mentioning is that the municipality does not have obstetric beds, with reference to low-risk births in the municipality of Caieiras.

When analyzing the causes of maternal deaths in the city, we realize that these are related to direct obstetric mortality (mostly pre-eclampsia, eclampsia and bleeding) and may indicate low-quality prenatal, poor quality of care at birth or even the lack of access of pregnant women to health services.

The development of MM and indicators related to prenatal coverage has been worrying health managers of the municipality of Franco da Rocha and led to the definition of this problem for the development of Evidence Briefs for Health Policy, which gathers global survey evidence (from systematic reviews) and local evidence for decisions on health policies and programs.

The Evidence Briefs for policy was developed by a group of students of the Professional Improvement Program in Public Health of the Health Institute, under researchers supervision of Health Institute Evidence Center, which is part of the Evidence Informed Policy Network - EVIPNet Brazil.

This article aims to present some results of this Evidence Briefs for policy, including the policy options identified and some aspects related to the implementation, to support municipal health management of Franco da Rocha on the decision making for confronting MM. The detailing on the options, cost-effectiveness and perception of the citizens involved can be found in the full text of the Evidence Briefs for policy.[VII]

[VII] Available at: http://www.saude.sp.gov.br/resources/instituto-de-saude/homepage/acesso-rapido/sintesedeevidencias-mm.pdf.

Methodology

The search for scientific evidence was held in the repositories of the Virtual Health Library, *Health Systems Evidence* and *PubMed* . The search strategy was given to the following terms and results: the BVS, "mortalidade materna" or "maternal mortality" or "mortalidad materna" or "maternal deaths" and applying the filter "Tipo de Estudo" and selection of 'Revisões Sistemáticas' returning 68 studies, of which, after reading the titles, 20 were selected for reading the abstracts; the HSE, "mortalidade materna" or "maternal mortality" or "mortalidad materna" or "maternal deaths", returning 20 studies, 14 selected for reading the abstracts (six systematic reviews completed, one economic evaluation and seven policy documents); in *PubMed*("mortalidade materna" or "maternal mortality" or "mortalidad materna" or "maternal deaths") or ((postpartum or "posparto" or puerperio) and (mortali$ and Matern$)) or ((antenatal or "ante natal" or prenatal or "pre natal") and (mortali$ and Matern$)),, applying the filter *"Article type"* and selecting *"Systematic reviews"* and *"Meta-analysis"*, returned 1076 studies; after reading the titles, 68 were selected for reading the abstracts. After reading the abstracts selected and identification of issues of concern, duplicate studies were excluded, systematic reviews focused on clinical management aspects and those related to hospital interventions, because the municipality does not count on obstetric beds under management, remaining for complete reading the total of 45 articles, of which six systematic reviews were selected on the effects of interventions to reduce maternal mortality, which met the scope to identify policy options of this evidence brief. The quality of systematic reviews was assessed using the AMSTAR instrument[19].

Results

Table 1 presents a summary of the six systematic reviews, which supported the definition of policy options.

Discussion

There are many options to address the MM, but not all of them have the same level of certainty, effectiveness or are conditioned by the same implementation factors. In addition, the policy options may range from isolated actions to very complex interventions, requiring consideration of the power of the beneficial and risks beyond the barriers and facilitating factors in various levels affected by the implementation of a policy, the health system to the individual. Based on evidence identified, five policy options described below were formulated.

Option 1 - Audit of maternal deaths and feedback to health professionals: Studies have shown that the auditing process of all maternal deaths, along with a feedback for health professionals, can help reduce MM, since knowing the cause of death is as important as just quantify it, it is essential that health professionals may have a return on their work[15]. In addition, a portion of maternal deaths worldwide could be prevented if health professionals were trained to meet the basic needs of women during pregnancy and childbirth.

Jamtvedt *et. al*[5], they evaluated in its high-quality systematic review, the effects of audit processes and feedback on the practice of health professionals and the results on the patients, showing that this strategy can be effective in improving the professionals practice. Then, the implementation of this option brings improved communication among professionals, improvement in the care of the patient and professional satisfaction[6], which can assist in

Option	Study	Option element	Purpose of the study	Hey findings	AMSTAR
1	Pattinson *et al.*[15], 2008.	Benefits of audit and feedback processes to health professionals.	Assess whether audit and feedback processes are effective for reduction of MM.	Controlled clinical trials have not been found to assess the effects of audit and feedback processes in MM. However, the author states that there is no doubt regarding the benefits that such processes bring and the audit process itself does not show major benefits, it must be done with the feedback process, where health professionals would have a return on their performance.	6/11
1	Jamtvedt *et al.*[5], 2003.	Influence of audit and feedback processes on professional practice.	Assess the effects of audit and feedback on the practice of health professionals and the results on patients.	The review included 118 studies. In the primary analysis 88 comparisons from 72 studies were included (any intervention in which audit and feedback were a component compared to no intervention). For dichotomous outcomes, the adjusted risk difference of compliance with desired practice ranged from - 0.16 (16% of absolute reduction in compliance) to 0.70 (an increase of 70% accordingly). For continuous outcomes, the adjusted percent variation in relation to control ranged from -0.10 (a 10% decrease in absolute compliance) to 0.68 (an increase of 68% accordingly). Low compliance with best practice in the baseline and higher intensity of audit and feedback were associated with larger adjusted risk ratios (greater effectiveness) in all studies.	9/11
2	Prost *et al.*[17], 2013.	Groups for discussions and participatory actions with pregnant women to empower women for self-care, recognizing when and where to seek help.	Assess the effect of discussion groups with pregnant women compared to the usual care for reduction of MM and neonatal in places with poor resources.	Seven studies were selected based on the criteria of inclusion and exclusion established in Bangladesh, India, Malawi and Nepal. In Malawi, women's groups for social empowerment were performed through 20 meetings. The results indicate that the intervention was a protective factor for the group of women 0·26 (0·10-0·70). In Nepal in a study where women's groups have been performed, there were 10 monthly meetings with participatory learning approach. The participation of the groups was a protective factor for MM 0·20 (0·04-0·91).	8/11

Option	Study	Option element	Purpose of the study	Hey findings	AMSTAR
2 and 3	Nyamtema *et al.*[12], 2011.	Intervention at the community level through discussion groups for establishing awareness on the danger signs of pregnancy complications.	Systematic review to explore the evidence available on interventions to reduce MM and the factors that influence its implementation in countries with limited resources.	Nyamtema *et al.*[12] sought, in a high quality systematic review, the available scientific evidence of interventions to reduce maternal mortality and the factors that influence its implementation in countries with limited resources. The results of the studies bring family planning as an important intervention in reducing maternal mortality. Study in Bangladesh showed family planning as a protective factor OR 0.99 (0.66 - 1.50). The results indicated that family planning is an effective intervention for reducing maternal mortality, but must be held inserted in integrated interventions programs and based on scientific evidence. The findings of the study in relation to the reduction of MM, through Community intervention, were based on randomized controlled study in Nepal, where participation in groups in the community was a protective factor for MM 0·20 (0 · 04-0 · 91) and other quasi experimental studies in Bangladesh.	10/11
4	Van Lonkhuijzen *et al.*[27], 2010.	Training courses for health professionals to improve the quality of obstetric care.	Assess the effectiveness of vocational training programs.	This review identified 24 articles about courses and their effects to health professionals. Studies on short-term courses show that professionals who attend these courses improve the care provided to patients, better perception of risk to life. Some studies of long-term courses that checked the impact of these courses and that there was little or no improvement in relation to knowledge of prenatal care, childbirth, birth, however, improved communication and teamwork. The gaps in the evidence with respect to the impact of these training courses remain, and should soon be considered when deciding on its implementation in the health system.	8/11
5	Paxton *et al.*[16], 2005.	Benefits of emergency obstetric care to reduce MM in developing countries.	Seek evidence for the effectiveness of the Emergency Obstetric Care as a strategy to reduce MM in developing countries.	This review identified that access to Emergency Obstetric Care reduces MM up to 50% of cases. It also shows that the larger the distance from a reference Obstetric emergency center, the greater the likelihood of maternal deaths. It is concluded that emergency obstetric care has been a good strategy for prevention of MM. These results strengthen the rationale for implementation and strengthening of health care networks.	8/11

the MM reduction process, although triggered effects are minor or moderate[15]. Since there are uncertainties regarding the benefits, the audit process does not show great benefits[15], gathering information and feedback meeting require a long time and may cause conflicts between employees, departments and institutions; and audit and feedback processes can result in fear of repressions to workers, thus preventing the effectiveness of their work[6].

Option 2 - Mobilizing Community and Educational Actions: Community empowerment permanent groups allow that there is better understanding, trust and support for self-care, making their audience more aware of "when" and "where" to seek health care, which can help reduce MM.

The literature suggests that the implementation of this option in places with poor resources presented, through integrated intervention programs based on scientific evidence, satisfactory results[12]. Moreover, in countries where intervention through groups with pregnant women was used, it was noted that when at least 30% of pregnant women were attending, there was a 49% reduction of MM[17]. Regarding the uncertainty of the benefits, the authors report no potential damage in this option, and point to the need, in countries with low resources that governments and health institutions to join in their commitments and responsibilities in the implementation of interventions packages based on scientific evidence[12].

Option 3 - Qualification of Family Planning Actions: Family planning accompanied by a gradual investment in the quality of services is capable of assisting in reducing MM in rural and urban areas[4], supporting the choices of women to decide whether or not to become pregnant and also offering barrier contraceptives in preventing sexually transmitted diseases.

For this action to be effective in its implementation to reduce MM, it should be carried out through integrated programs and interventions based on scientific evidence[12]. Uncertainties of benefits refer to religion, which can be a way of preventing the use of the methods; and the distribution of contraceptives to young people. This should be done so that they do not cause embarrassment to the parents or rejection for their children[19].

Option 4 - Training for Health Professionals: The training for health professionals consists of a program for Continuing Education in health, which seeks a dynamic and pedagogical process development and qualification actions harboring knowledge in technical and scientific dimensions, ethical-political and socio-educational assistance performed by these workers. It also values the improved ability to provide care to women through interventions that consider all dimensions of the human being in order to improve maternal health.

Van et Lonkhuijzen *et al.* (2010)[27] in a high quality systematic review evaluated the effectiveness of training programs to improve emergency obstetric care in environments with poor resources. It was identified that professional training courses contribute positively in increasing knowledge and, consequently, the behavior of skills after training; thus, professionals participating in these courses have higher feedback with the team, tasks and communication management, competence to perform their tasks in service, awareness of the lack of care, better identification of conditions that cause risk of death and increased peer-education compared to those who did not participate in any professional training course.

As potential damage and uncertainties regarding the benefits of this option we can see that the excessive control of the professional performance, in case of recertification, seems to

have negative effects on these[11]. Thus, although this option presents numerous improvements, the success of the strategy is linked to the method of evaluation and monitoring of the action, subject and effects on the budget[27].

Option 5 - Referencing to Emergency Obstetric Services: Early detection and consequently the referencing to obstetric emergency specialized care services are essential to prevent and reduce MM.

The literature suggests that in areas where there is emergency obstetric service coverage and access is facilitated, the reduction of MM is up to 50% [16]. It should be noted that, in order to assist in this reduction is necessary to have good quality in services[3], creating standards and rapid transfer protocols between the service unit[11] and training of multidisciplinary teams to work within the institution and community, distributed equivalently in all establishments offering obstetric care services[24].

As uncertainties regarding the benefits, we have the lack of commitment of decision makers and other key players in the financing of providers agencies, which could give support to programs, and can harm the funding of this option[14].

Conclusion

Although the options presented do not have necessarily to be implemented jointly and in full, the implementation should consider the local viability, being inserted in the governance of decision-making, regardless of the size of the health system (national, regional or local). In this sense, the policy options focused on Primary Care could be prioritized, since the municipality does not have obstetric beds in their management. It is also important to consider the barriers for implementation of options, especially those located in the field of culture and social representations of users and health workers.

The policy options were presented and discussed extensively on a Deliberative Dialogue (consisting of a structured discussion focused on an evidence briefs for policy), with the participation of municipal managers, health professionals participating in the Research Committee for MM and Children of the municipality, representatives of the Municipal Health Council, the State Committee for MM and Children Research and researchers.

It is expected that the result of this process is the definition of a municipal action plan to confront the MM in the municipality of Franco da Rocha, built on scientific evidence and the local context.

References

1. Blackwell SP, Breen M, Hinshaw K. Learning from low income countries: what are the lessons? Hands on course may help deliver obstetric care. BMJ. 2004;329(7475):1184.

2. Coimbra CL, Silva AMA, Mochel EG, Alves MTSSB, Ribeiro VS, Aragão VMF, et al. Fatores associados à inadequação do uso da assistência pré-natal. Rev Saúde Pública. 2003;37:456-62.

3. Fournier P, Dumont A, Tourigny C, Dunkley G, Dramé S. Improved access to comprehensive emergency obstetric care and its effect on institutional maternal mortality in rural Mali. Bull World Health Organ. 2009;87:30–38.

4. Goldie SJ, Sweet S, Carvalho N, Natchu UCM, Hu D. Alternative strategies to reduce maternal mortality in India: a cost-effectiveness analysis. PLoS Med. 2010;7(4):e1000264.

5. Ivers N, Jamtvedt G, Flottorp S, Young JM, Odgaard-Jensen J, French SD, et al. Audit and feedback: effects on professional practice and health care outcomes. The Cochrane Database of Systematic Reviews, 3, 2003.

6. Johnston G, Crombie IK, Davies HTO, Millard A. Reviewing audit: barriers and facilitating factors for effective clinical audit. Qual Health Care. 2000;9(1):23–36.

7. Jonas, E. Improving provider performance: an exploration of the literature, Box 3. Bolivia In-Service Training. Mother Care Matters. 2000;9:10–1.

8. Kroeger M, Kaphagawani N, Kafulafula UK, Maluwa VM. Final evaluation of the malawi safe motherhood project life saving skills training programme. Blantyre: DFID/Safe Motherhood Project. 2003.

9. McDermott J, Beck D, Buffington ST, Annas J, Supratikto G, Prenggono D, et al. Two models of in-service training to improve midwifery skills: how well do they work? J Midwifery Womens Health. 2001;46:217–25.

10. Merkur S, Mladovsky P, Mossialos E, Mckee M. Policy brief. Do lifelong learning and revalidation ensure that physicians are fit to practise? Copenhagen: WHO; 2008.

11. Ministère de la Santé Publique et de la Population. Normes et procédures cliniques des services de santé de la reproduction en République Centrafricaine. Haiti; 2003. 84p.

12. Nyamtema AS, Urassa DP, Roosmalen JV. Maternal health interventions in resource limited countries: a systematic review of packages, impacts and factors for change. BMC Pregnancy and Childbirth. 2011; 11:30.

13. O'rourke K. The effect of hospital staff training on management of obstetrical patients referred by traditional birth attendants. Int J Gynaecol Obstet. 1995; 48(Suppl):S95-102.

14. Pattinson R, Kerber K, Waiswa P, Day LT, Mussell F, Asiruddin SK, et al. Perinatal mortality audit: counting, accountability, and overcoming challenges in scaling up in low-and-middle-income countries. International Jornal of Gynaecology and Obstetrics. 2009;107:113–21,121–2.

15. Pattinson RC, Say L, Makin JD, Bastos MH. Auditoría de acontecimientos críticos y retroalimentación ("feedback") para disminuir la mortalidad y la morbilidad perinatales y maternas (Revisión Cochrane traducida). Biblioteca Cochrane Plus. 2008;4.

16. Paxton A, Maine D, Freedman L, Fry D, Lobis S. The evidence for emergency obstetric care International Journal of Gynecology and Obstetrics. 2005; 88:181-193.

17. Prost A, Seward N, Azad K, Coomarasamy A, Copas A, Houweling TAJ, et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013;381:1736–46.

18. Ronsmans C, Vanneste A, Chakraborty J, Van Ginneken J. Decline in maternal mortality in Matlab, Bangladesh: acautionary tale. Lancet.1997;350:1810-4.

19. Sepou A, Serdouma E, Komas NP, Gody C, Abeye J, Koffi B, et al. Strategies for reducing maternal mortality in Central African Republic. Evidence Informed Policy Network (EVIPNet); 2011.

20. Shea JB, Grimshaw JM, Wells GA, Boers M, Andersson N, Hamel C, et al. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. BMC Medical Research Methodology, London. 2007;7:10.

21. Sloan NL, Nguyen TN, Do TH, Quimby C, Winikoff B, Fassihian G. Effectiveness of lifesaving skills training and improving institutional emergency obstetric care readiness in Lam Dong, Vietnam. J Midwifery Womens Health. 2005;50:315–2.

22. Thairu A, Schmidt K. Training and author is ingmid level providers in life saving skills in Kenya case study No 8. In: Crump S, editor. Shaping policy for maternal and newborn health: a compendium of case studies. Baltimore, MD: JHPIEGO. 2003.

23. Warren C, Liambila W. Safe motherhood demonstration project western province. approaches to providing quality maternal care in Kenya. Nairobi: Population Council. 2004.

24. World Health Organization. Monitoring emergency obstetric care: a handbook. Geneva; 2009.

25. World Health Organization. Trends in maternal mortality: 1990 to 2008. Estimates developed by WHO, UNICEF, UNFPA and The World Bank. Geneva; 2010. [accessed on June 13, 2015]. Available at: http://whqlibdoc.who.int/publications/2010/9789241500265_eng.pdf

26. Woods DL. An innovative programme for training in maternal and newborn care. Seminars in Fetal & Neonatal. 1999;4(3):209-216.

27. Van Lonkhuijzen L, Dijkman A, Van Roosmalen J, Zeeman G, Scherpbier A. A systematic review of the effectiveness of training in emergency obstetric care in low-resource environments. BJOG. 2010; 117(7):777-87.

Health policy options aimed at reducing inappropriate prescriptions of antidepressant drugs

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Abstract

Mental disorders generate high social and economic costs, leading to decreased quality of life for those people affected by them. Although there are different therapeutically approaches to these diseases, in the last 10 years, there has been a significant increase in consumption and use of psychoactive drugs in the world. Technicians and managers of Franco da Rocha's municipal Secretary of Health expressed concern about the medicalization of mental suffering in their municipality. A data survey was conducted, and the results confirmed the existence of high rates of prescribed antidepressants and inappropriate prescriptions of those drugs. An evidence briefs for policy of health policies was produced to propose options to reduce inappropriate and/or unnecessary prescription of antidepressants in Franco da Rocha. Evidence-Informed Policy Network (EVIPNet) methodology was used. From the reading of systematic reviews, four options were identified to respond to the problem posed. The evidence brief for health policy will be presented to professionals and managers of the Health Department of Franco da Rocha's City by conducting a deliberative dialogue.

Keywords: Antidepressants; Psychotropic Drugs; Evidence brief for policy.

Antidepressants and improper prescription

Mental disorders, even affecting low mortality rates, generate a high social and economic cost, as they can cause severe and definitive incapacities, as well as reduced quality of life for the people affected[17]. Although there are different therapeutic approaches to these aggravations, both pharmacological and non-pharmacological, in the last 10 years there has been a significant increase in the consumption and use of psychotropic drugs worldwide.

Among the factors that affect rational and adequate prescription of psychotropic drugs are the imprecise diagnosis, patient pressure, lack of access or lack of knowledge of therapeutic alternatives, among others[9,3,18]. According to WHO[15], a well-chosen treatment or a good prescription should contain the fewest drugs, with minimal side effects, no contraindications, fast action, simple and short dosage.

In a meeting held in 2015, technicians and managers of the Municipal Health Department

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of Franco da Rocha expressed concern regarding the medicalization of mental suffering in the municipality. An initial diagnosis for delineation of the problem in the municipality[VII] showed that more than half (55%) of the controlled drugs dispensed in the three-month period were antidepressants. Based on the DDD pop/day index[VIII], it was observed that the indicator of Franco da Rocha for dispensing antidepressants (63.16) is superior to that found in other studies, such as the DRS of Assis (17.0)[11], for example. In both the complaints presented by the managers and the initial diagnosis, it was identified a repetition or exchange of prescriptions without reassessment of the diagnosis and treatment, which is one of the items found in the international literature associated with inadequate prescription of medications[6,1,3]. It was also mentioned by the technicians and managers the existence of the medicalization of patients suffering from mild and common mental disorders, which is another element considered to constitute an inadequate prescription in the scientific literature[6,1,4].

In view of these findings, there was in fact a high rate of prescription of antidepressants and the existence of inadequate prescriptions of these drugs. In this sense, it is extremely useful to identify options informed by scientific evidence to subsidize actions that can reduce inappropriate prescriptions and make mental health care more integral, multiple and adequate to the variability of the individual needs of the population.

Purpose

This article is intended to present the results of the evidence briefs for policy by which options to reduce inappropriate or unnecessary prescription of antidepressants in the municipality of Franco da Rocha were identified, in order to support managers in the preparation of public policies based on the scientific literature[IX].

Methods

In order to prepare this evidence briefs for policy, the SUPPORT tools of the Evidence-based Policies network (EVIPNET) were used. These tools, developed by WHO, guide how to locate, evaluate and use the scientific evidence to address specific problems identified by managers and policy makers[12]. For the identification of scientific evidence that could respond to the problem of inadequate and unnecessary prescriptions of antidepressants, a selection of systematic reviews addressing the subject was made. For the selection of these reviews, the Health Systems Evidence, Virtual Health Library (VHL) and PubMed databases were used. The descriptors used were "prescription", "dispensing", "psychotropic", "medication", "psychoactive", "antidepressants", "benzodiazepines", "tranquilizers" and "mood stabilizers", in Portuguese and English, according to the database used. No filters were used in the Health Systems Evidence database. In VHL, the filters were: "available" complete text, study type "systematic review", "overview", "assessment of health technologies". In PubMed, the filters were: "systematic review", "5 years", "humans", "English", "Portuguese" e "Spanish".

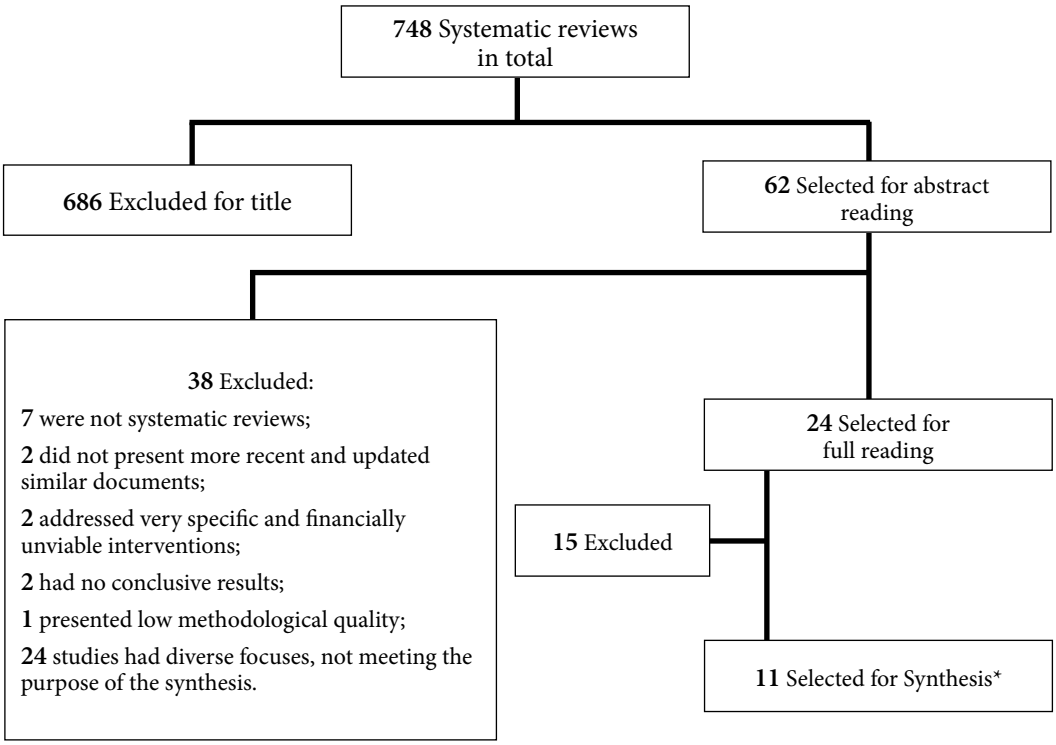
[VII] Data from 3,293 psychotropic drugs dispensed during the period from March 15 to May 15, 2015, at the Central Pharmacy of the municipality, were collected and analyzed with the authorization of the Municipal Health Department.

[VIII] DDD: daily dose defined per 1,000 inhabitants per year, which formula is available at the Essential Medicines and Health Products Information website: www.who.int/medicinedocs/en/

[IX] The complete synthesis is available at http://www.saude.sp.gov.br/resources/instituto-de-saude/homepage/pdfs/sinteseevidencias_saudemental.pdf

In total, 748 results were obtained. After reading the titles, 62 articles were selected for reading the abstracts, and 38 articles were excluded. From these, 24 were selected for full reading. The quality of the systematic reviews was evaluated by the AMSTAR (Assessing the Methodological Quality of Systematic Reviews)[x] *instrument and no limiting score was used to exclude studies.*

Figure 2. Flowchart of the article selection process.



* Two systematic reviews were included after a search using the Google search engine and from the bibliographic references of one of the studies.

Results

After the complete reading of the texts, 11 systematic reviews were used in the synthesis, of which, two systematic reviews were included after a search using the Google search engine and from the bibliographic references of one of the studies[7].

From the findings in the systematic reviews, four options that may contribute to the reduction of inappropriate or unnecessary prescriptions of antidepressants were identified: 1) increase the performance of pharmacists and other members of the multidisciplinary team in the qualification of antidepressant prescriptions performed by physicians; 2) provide technical support and educational interventions to reduce inappropriate or unnecessary prescription of antidepressants; 3) perform patient-centered interventions to re-evaluate, adjust and re-adjust the prescription

[x] Available at: http://brasil.evipnet.org/.

of antidepressants; and 4) provide alternative therapeutic approaches to psychotropic drugs that are effective in reducing depression.

The systematic reviews presented as the main elements of the change in the prescriptive behavior of health professionals and the reduction of inappropriate use and/or prescription of medications, aiming to improve the patients' quality of life. In percentage terms, the first and third options each used, respectively, 45% of systematic reviews. The second option used 36% of the reviews found and the fourth option used 27%. The total exceeds 100% because some revisions have been used to substantiate more than one option.

Extension of the activities of pharmacists and multidisciplinary team

This option is based on the knowledge of some trained and updated professionals in the orientation, therapeutic reasoning, knowledge of the medicines and evaluation of the prescriptions performed in the services, in order to use the knowledge of these professionals to qualify the prescriptions provided by the physicians. It includes interventions aimed at providing technical support to improve prescription behavior and reduce the inappropriate use of psychotropic drugs, emphasizing the presence of the pharmacist, with or without the presence of other members of the multiprofessional team[7,6,1,10,14].

The main elements that make up this option are regular educational visits developed mainly by pharmacists, but also by other health professionals, combining medication evaluation/review interventions, provision of scientific evidence and other materials related to appropriate medication use, orientation meetings , consultancies, case discussions, preparation of lists of medicines with recommendations made by pharmacists for health professionals, individually or in a multidisciplinary team, among other procedures[7,6,1,10,14]. These interventions allow drug prescription to be conducted on the basis of updated scientific evidence, allowing for the creation of clinical guidelines and protocols that follow criteria for the rational use of drugs, reducing risks of adverse effects, costs and unnecessary use in long-term.

Five systematic reviews evidenced that the presence of a pharmacist, acting through regular educational visits to the physician and the nursing teams to carry out the drug evaluation, produced significant results[6,1,10,14]. Therefore, the presence of this professional is perceived as fundamental to achieve the reduction of the use of medications and change of prescription behavior, also promoting the establishment of relationships that influence the clinical practice of health professionals[7,6,1,10,14].

A systematic review presented uncertainties about the relationship between the existence of potentially inappropriate prescriptions and the availability of the pharmacist at the site allowing for consultation and promoting improvements in the quality of prescriptions[10]. The results of the interventions are not restricted to the presence of the pharmacist, but depend on multiple factors, such as the participation of the professionals involved, the way the intervention is implemented, the duration, frequency and intensity of the intervention, local culture, among others[7,10].

Availability of technical materials and educational interventions

This option is based on the qualification of health professionals to make prescriptions that are appropriate to the patients' needs and based on the knowledge acquired. The option also involves the preparation and distribution of

clinical care protocols, manuals and/or guidelines for different situations, with updated information regarding indications, risks and consequences of the use of antidepressants. Several educational interventions were carried out with physicians and other health professionals, such as: meetings, conventions and training courses[7]; development of regulatory policies and/or guidelines to guide drug prescription[10]; qualification for professionals in non-pharmacological therapies[14].

A review identified that 72% of educational interventions were considered effective in generating changes in the prescription behavior toward the expected, but the authors did not identify which type of intervention or combination of interventions was most effective[4]. Another review pointed to positive results in the behavior change of the prescribers after the distribution of technical materials, the performance of trainings and lectures. Results were also obtained in the change of prescriptive behavior through a combined intervention of training, use of educational material and meetings with psychiatrists[4].

A review suggested that educational interventions should be carried out on an ongoing basis, because when they are performed on time or only in one visit they show little effectiveness in changing the behavior of prescribers[14]. Another review identified that interventions, if performed isolated (with no combination with other types of intervention), are less likely to lead to change in prescribing behavior[7].

Patient-centered interventions

The focus of this option is the participation of the patients in the choice of their treatment, in the review of the medication and/or in the decision on its withdrawal. Patients are considered to be essential and may influence either excessive or unnecessary prescription as well as contribute to the accuracy and adequacy of these prescriptions. One of the elements of this option is the withdrawal, procedurally and patient-centered, of the medication identified as inappropriate or unnecessary[XI].

When the patient participates in the process of determining the appropriateness of the use of a particular medication, he is able to highlight which medicines he values and which are not necessary. In addition, the consideration and application of factors to be taken into account when determining the appropriateness of the medication (need, benefit, future risk of adverse reactions, potential drug interactions, adherence, patient preferences, among others) allows the identification of drugs that were previously appropriate, but which, over time, had their risks or benefits diminished[16].

Alternative care models and therapeutic approaches

This option intends to offer non-pharmacological alternatives for the care of mental suffering, showing the impact that these proposals have on reducing the unnecessary and inadequate use of antidepressants, their benefits and therapeutic efficacy. It was found that the insertion of mental health professionals in the primary care service, working alongside general practitioners[XII], making use of various approaches to psychosocial care, regardless of the therapeutic approach used, reduced the prescription of psychotropic drugs, repeated visits with physicians and referrals to out-of-service mental health professionals. However, there was also evidence

[XI] This procedure is called deprescribing process[16].

[XII] Model known as replacement model[18].

that the presence of these professionals did not change the behavior of physicians in relation to the prescription of psychotropic drugs to other patients of the service, only to those who were involved in such non-pharmacological therapeutic approaches[8].

It was also identified that the collaborative care model was effective for the improvement of depression in both the short and medium term, and also in the satisfaction with the treatment and in the appropriate use of psychotropic drugs[2]. It was considered collaborative care of mental suffering when the care provided offered: 1) a multiprofessional care approach; 2) a structured, evidence-based plan/project for each case; 3) a continuous follow-up for the patient (monitoring needs, demands, adherence, adverse effects, improvement); 4) some communication strategy about the care offered among the professionals involved[8].

Cognitive-behavioral therapy (CBT) also proved to be somewhat superior to antidepressants in the treatment of depression and had the same effectiveness as behavioral therapy. There is long-term efficacy of this type of psychotherapy for depression, generalized anxiety, panic, social phobia, obsessive-compulsive disorder, among other pathologies. In cases of depression and panic, there is great evidence that CBT produces longer lasting results, with individuals treated with this therapy showing half the rate of relapse compared to cases treated with pharmacotherapy[5].

Considerations on equity of options

The participation of pharmacists in the qualification of the psychotropic prescriptions depends on the existence in the municipality of pharmacists and other professionals trained for this purpose, as well as spaces in the services that allow the continued discussion of the medicines. The reduced number of pharmacists in the municipality may be an important weakness for the implementation of this option.

The need for trained professionals or the training of professionals, as well as the organization and availability of resources for training, workshops and other educational activities, are determinants that may have a negative impact on the applicability of the expansion of the activities of pharmacists and other members of the multidisciplinary team or the use of educational actions and materials in the qualification of antidepressant prescriptions.

Regarding patients, those with little instruction or little access to education may feel insecure or unable to get involved with issues related to prescription, leaving the doctor to manage their treatment. It is important that patients have access to information and knowledge relevant to treatment in accessible language so that they feel safe and able to participate in decision-making.

In order to provide alternative therapeutic approaches to psychotropic drugs, it is necessary that professionals trained for non-pharmacological therapies are available and that alternative approaches to medication may be offered before or in conjunction with the pharmacological treatment, depending on the joint assessment of their suitability and relevance to each individual situation. It is important to establish a line of mental health care from Basic Care, which can offer non-pharmacological therapeutic approaches in units of all the regions of the municipality, always in the services near the patients' home and with options of care in varied days and times.

Considerations on implementation of options

One of the factors that should be considered in the implementation of these options in the municipality of Franco da Rocha is the existence

of a local culture of medicalization of mental suffering. The history of the region, which is marked by the presence of Juquery Psychiatric Hospital, should also be considered. Health professionals may resist the prospects of reducing, replacing, withdrawing or supplementing the use of antidepressant drugs proposed by the options presented here, as well as restrictions on the participation of different professional categories and of the patient himself in the decision on the prescription and withdrawal of medicines.

It is necessary to prepare and disseminate protocols, manuals and guidelines for the treatment of mental disorders that can guide physicians in well-reasoned prescriptive reasoning, rational use of medications and alternative therapeutic approaches. However, both the production of technical materials and the execution of educational interventions depends on the availability of financial resources. The organization of the lines of care in mental health and the documents and qualifications intended in this sense can be of great contribution to the qualification of the care offered.

Final considerations

The process of implementation of the Psychosocial Care Network in the city, the policy of deinstitutionalization of mental disorder patients and the current Brazilian Mental Health Policy, focused on a more comprehensive, multiprofessional and intersectoral care, are important contextual factors required by the paradigm of the presented problem. It is understood that all the options raised here can generate benefits for the system and/or managers in reducing drug costs.

It should be emphasized, however, that each of the proposed options should be analyzed in light of the current context of implementation of the Psychosocial Care Network (RAPS) and the Mental Health policy in the municipality of Franco da Rocha. The intentionality of the managers of the services of review and overcoming the traditional culture of medicalization of mental suffering, the implementation of new ways of performing care and of new mental health equipment in the municipality and the construction of the line of care in Mental Health of the State of São Paulo can be decisive factors in the implementation of these actions.

References

1. Alldred DP, Raynor DK, Carmel H, Nick B, Chen TF, Pat S. Interventions to optimise prescribing for older people in care homes. Cochrane Database of Systematic Reviews. The Cochrane Library; 2015;(9).

2. Archer J, Bower P, Gilbody S, Lovell K, Richards D, Gask L, et al. Collaborative care for depression and anxiety problems. The Cochrane Library; 2012.

3. Bradley CP. Factors which influence the decision whether or not to prescribe: the dilemma facing general practitioners. British Journal of General Practice; 1992[accessed on October 20, 2015];454-458. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1372266/pdf/brjgenprac00050-0008.pdf

4. Brennan N, Mattick K. A systematic review of educational interventions to change behaviour of prescribers in hospital settings, with a particular emphasis on new prescribers. British Journal of Clinical Pharmacology; 2012[accessed on October 20, 2015];75(2):359-372. Available at: http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2125.2012.04397.x/pdf

5. Butler CA, Chapman JE, Forman EM, Beck AT. The empirical status of cognitive-behavioral therapy: a review of meta-analyses. Clinical Psychology Review; 2006;(26):17-31.

6. Chhina H, Bhole VM, Goldsmith C, Hall W, Kaczorowski J, Lacaille D. Effectiveness of academic detailing to optimize medication prescribing behaviour of family physicians. Journal of Pharmacy and Pharmaceutical Sciences; 2013[accessed on October 20, 2015];16(4):511-529. Available at: https://ejournals.library.ualberta.ca/index.php/JPPS/article/view/20414/15734.

7. Forsetlund L, Eike MC, Gjerberg E, Vist GE. Effect of interventions to reduce potentially inappropriate use of drugs in nursing homes: a systematic review of randomised controlled trials. Norway: BMC Geriatrics; 2011[accessed on October 21, 2015];11-16. Available at: http://bmcgeriatr.biomedcentral.com/articles/10.1186/1471-2318-11-16

8. Harkness EF, Bower PJ. On-site mental health workers delivering psychological therapy and psychosocial interventions to patients in primary care: effects on the professional practice of primary care providers. The Cochrane Library; 2015(9).

9. Hyde J, Calnan M, Prior L, Lewis G, Kessler D, Sharp D. A qualitative study exploring how GPs decide to prescribe antidepressants. British Journal of General Practice; 2005[accessed on October 21, 2015];755-762. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1562347/pdf/bjpg55-755.pdf

10. Kaur S, Mitchell G, Vitetta L, Roberts MS. Interventions that can reduce inappropriate prescribing in the elderly: a systematic review. Drugs Aging; 2009:26(12):1013-1028.

11. Lamb IGM. A prescrição de psicofármacos em uma região de saúde do Estado de São Paulo: análise e reflexão sobre uma prática [dissertação de mestrado na internet]. Assis: Faculdade de Ciências e Letras de Assis da Universidade Estadual Paulista; 2008. [accessed on October 20, 2015]. Available at: http://repositorio.unesp.br/bitstream/handle/11449/97588/lamb_igm_me_assis.pdf?sequence=1&isAllowed=y

12. Lavis JN, Oxman AD, Lewin S, Fretheim A. Ferramentas SUPPORT para a elaboração de políticas de saúde baseadas em evidências (STP). Health Research Policy and System; 2009[accessed on October 21, 2015];7(Suppl 1:II):1-7. Available at: http://download.springer.com/static/pdf/883/

13. Mojtabai R, Olfson M. Proportion of antidepressants prescribed without a psychiatric diagnosis is growing. Health Affairs; 2011[accessed on October 21, 2015].;30(8):1434-1442. Available at: http://content.healthaffairs.org/content/30/8/1434.long

14. Nishtala PS, McLachlan AJ, Bell SJ, Chen TF. Psychotropic prescribing in long-term care facilities: impact of medication reviews and educational interventions. The American Journal of Geriatric Psychiatry; 2008;16(8):621-632.

15. Organização Mundial da Saúde. Guia para a boa prescrição médica. Bucweitz C, tradutor. São Paulo: Artmed; 1998.

16. Reeve E, Shakib S, Hendrix I, Roberts MS, Wiese MD. Review of deprescribing processes and development of an evidence-based, patient-centred deprescribing process. British Journal of Clinical Pharmacology; 2014 [accessed on October 20, 2015];78(4):738-747. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4239968/pdf/bcp0078-0738.pdf

17. Santos EG, Siqueira MM. Prevalência dos transtornos mentais na população adulta brasileira: uma revisão sistemática de 1997 a 2009. Revista Brasileira de Psiquiatra; 2010;59(3):238-246.

18. Tentler A, Silberman J, Paterniti DA, Kravitz RL, Epstein RM. Factors affecting physicians' responses to patients' requests for antidepressants: focus group study. Journal of General Internal Medicine; 2008 [accessed on October 20, 2015];23(1):51-57. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2173928/pdf/11606_2007_Article_441.pdf.

Evidence brief for policy: reducing the perinatal mortality in the municipality of Porto Feliz - SP

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Abstract

This article presents some of the main results of an Evidence Brief for Health Policy, developed in the Professional Master's Program in Public Health of the Health Institute, in which four viable options were identified to address the problem about perinatal mortality in municipality of Porto Feliz: a) qualification of pre -natal through risk rating for pregnant and adequacy of management of examinations; b) development of prevention and treatment protocol respiratory distress of newborn; c) implementation of family planning with a focus on prevention of teenage pregnancy and prevention and treatment of illicit drug use during pregnancy d) structure and organization of education actions in health and home visits in prenatal and puerperium. Each identified option also took up issues related to equity and possible barriers to implementation of interventions. The analysis of equity related to the implementation of the options, especially considering access to health services, the identification of the training needs of teams to work on specific themes and the development of health education to the community were included so that options do not produce different results for different groups in the city.

Key Words: Evidence brief for policy; Perinatal Mortality; Prenatal Care

Introduction

In the last 30 years Brazil has advanced a lot in improving care during labor and birth, the result of a series of efforts and initiatives of the government and society. Despite the decline in infant mortality noted in Brazil, this issue remains a major concern in public health. The current levels are considered high and incompatible with the development of the country, with serious problems to overcome, such as persistent and notorious regional and intra-urban inequalities, with a concentration of deaths in the poorest population, in addition to the inequities related to specific social groups such as Indians and black[18]. In Brazil, the infant mortality rate in 2011 was similar to that of developed countries in the late 60's, and about three to six times higher than that of countries such as Japan, Canada, Cuba, Chile and Costa Rica, which have rates between 3 and 10/1000 live births[6]. These countries have a simultaneous reduction in post-neonatal mortality (deaths in children between 28 days and one-year-old) and neonatal (deaths between 0 and 27 days), while in Brazil there was no significant change in the neonatal component in recent decades[11] ·These early deaths are considered preventable in most cases, since guaranteed access in a timely manner to qualified health services. They are result of a combination of biological, social, cultural and health factors and failures of health

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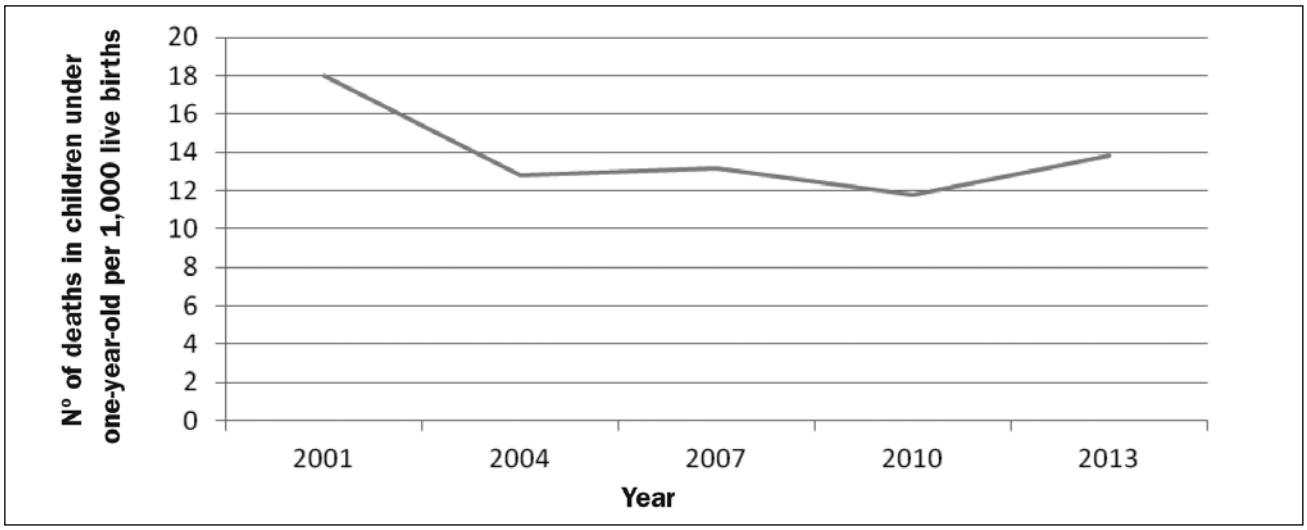
system. In turn, the fetal mortality (deaths from 22 completed weeks of gestation, or 154 days, or in fetuses weighing and greater than 500g or height from 35 cm) shares with early neonatal mortality (deaths in the first week of life, from 0 to 6 days) the same circumstances and etiology influencing the outcome for the fetus in late pregnancy and the child in the first hours and days of life. Fetal deaths are also largely considered potentially preventable, but have historically been neglected by health services, which have not yet incorporated in their work routine analysis of their occurrence nor specific investments intended to reduce it.

Perinatal mortality (which includes the fetal and early neonatal deaths) has been a topic hotly debated by health teams in the municipality of Porto Feliz. It was found in the municipality that most fetal and infant deaths, in 2014, was avoidable. The United Nations set a target for reducing child mortality (children deaths with less than one-year-old per thousand live births) of 15.7 in 2015. Brazil reached the proposed target, with an infant mortality rate in 2013 of 15.3. In São Paulo the rate was 11.5 in the same year, lower than the national infant mortality. However, the Regional Health Department of Sorocaba, where the municipality of Porto Feliz is located, the infant mortality rate in 2013 was 13.2 deaths per thousand live births, reflecting regional inequalities existing in the state.

In Chart 1, the evolution of infant mortality rates in the municipality is presented using the moving average method (by calculating the average of the coefficients every three years), in order to reduce the fluctuation of the coefficients and facilitate trends observation. Through this analysis, we can see there is downward trend of the child mortality from 2001 to 2014, followed by a period of stabilization and subsequent increase from 2010 to 2013.

Chart 1. Evolution of infant mortality rates (moving average of 3 years) in the period from 2001 to 2014, in the municipality of Porto Feliz, SP.



Source: DATASUS. Tecnologia da Informação a Serviço do SUS (TABNET), Ministry of Health.

The analysis of perinatal mortality in the city (deaths occurring between the 22nd week of pregnancy to the 7th day after birth) is also worrying, as shown in Figure 2. It should be noted the increase in perinatal deaths between 2011 and 2012, the stabilization of the coefficient at high levels in 2013 and the further increase of it in 2014. Among the causes of perinatal mortality, the investigation of deaths conducted by the Municipal Infant Mortality Committee points out that special attention should be given to infections that occur during pregnancy, prematurity (with consequent respiratory distress) and teenage pregnancy and among drug users.

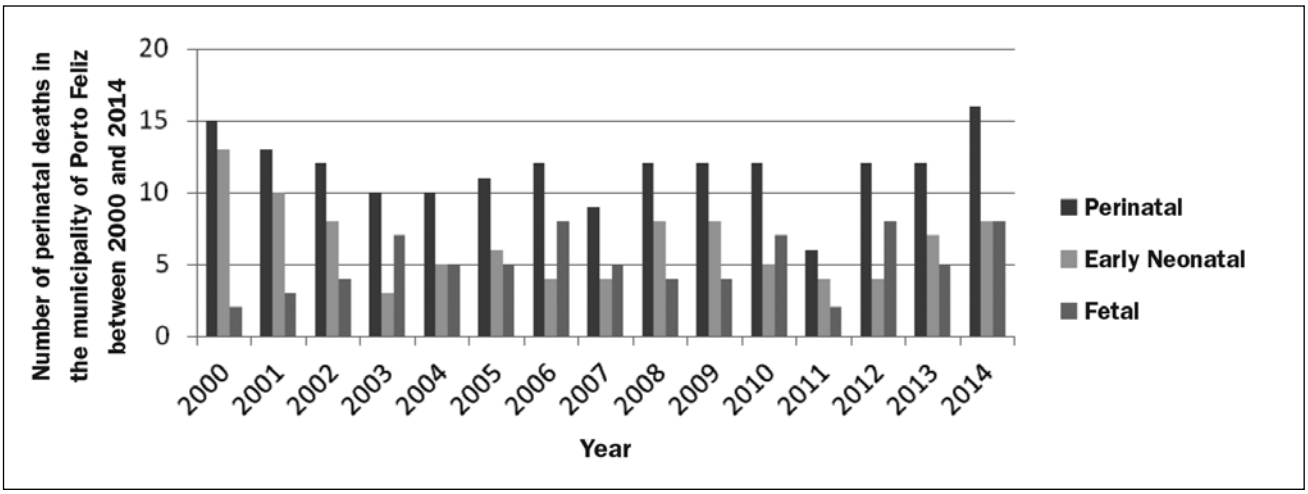
Based on national and state goals, the worsening of the indicators of infant and perinatal mortality, and analysis of local data by the Infant Mortality Committee, it was considered appropriate to prioritize the perinatal mortality as the subject matter of an Evidence Briefs for policy, which was drawn up in the Professional Master's degree Program in Public Health of the Health Institute. This article aims to present some results of this event briefs, including options of identified policy, barriers and strategies for their implementation and some considerations related to equity, to support managers and professionals in reducing perinatal mortality in the municipality of Porto Feliz.

Methods

The methodology proposed to develop the Evidence briefs for policy was based on the SUPPORT tool (SUPporting POlicy relevant Reviews and Trials)[12] following the guidelines of EVIPNet (Evidence Informed Policy Network). This Network is coordinated in the Department of Science and Technology (Decit) of the Secretariat of Science, Technology and Strategic Inputs (SCTIE) of the Ministry of Health (MOH) and has as main objective to strengthen policies and public health systems through systematic use of search evidence [5].

The following steps of knowledge translation were developed: 1. Priorities for the definition of programs/policies: Formation of an evidence group in the Municipal Health Department of the municipality of Porto Feliz to define the priority problem; 2. Search of Evidence and selection of studies: It was

Chart 2. Evolution of perinatal deaths, neonatal and fetal per year of occurrence in the municipality of Porto Feliz, 2000-2014.



Source: DATASUS. Tecnologia da Informação a Serviço do SUS (TABNET), Ministry of Health.

performed through search of systematic reviews in two databases (Virtual Health Library - BVS and Health Systems Evidence - HSE). 14 Systematic Reviews were used to compose the Evidence Briefs for policy; 3. Data extraction: A table of the main results of each selected study and evaluation of it with the AMSTAR[1] instrument was prepared; 4. Definition of Options for the Policy Approach: 4 four options for addressing the problem were defined. 5. Definition of barriers for implementation and aspects related to equity of options: This step was based on the search for evidence and through brainstorming with municipal staff.

Results and Discussion

The following are the four policy options presented in the document of the Evidence Briefs for policy for addressing the perinatal mortality in the municipality of Porto Feliz (Table 1). In this article will be presented, initially, the benefits, potential harms and uncertainties for each of the options. The issues related to the main elements of the options, cost-effectiveness and perception of the citizens involved can be found in the full text of the Evidence Briefs for policy, available in www.isaude.sp.gov.br

Table 1. Options to address the problem of perinatal mortality in the municipality of Porto Feliz.

Option 1. Qualify the attention to prenatal care through the pregnant woman's risk classification and adequacy of tests management	
Benefits	In a high quality systematic review, we concluded that, although it is not clear the relationship between the implementation of a risk classification form and the prevention of premature delivery, the implementation of the form has the potential to guide professionals and pregnant women to make decisions on the management of pregnancy in the presence of complications[3]. In another systematic review, it also suggests that for better detection of intrauterine growth restriction, it should be associated with measures of body weight of pregnant women, uterine measures and realization of obstetrical ultrasound[9]. In a third systematic review of high quality, it was found that the rapid test for syphilis is effective for early diagnosis and early treatment, reducing congenital syphilis and promoting improved access for the treatment of woman and her partner[19].
Potential damage	There were no risk or potential harm reported to the introduction of this option.
Uncertainties	The authors reported that there is a need for further studies to determine the effectiveness of syphilis testing to improve outcomes in pregnant women and newborns, especially in high-risk regions[19].
Option 2. Prepare protocol for prevention and treatment of respiratory distress of the newborn.	
Benefits	In a high quality review, we evaluated intramuscular progesterone administration and it was shown that its use is associated with reduced risk of preterm labor below 37 weeks of gestation and preterm birth below 34 weeks, reduced risk of children born weighing less than 2,500 grams and intraventricular hemorrhage reduction in infant[4]. In another high-quality systematic review, the authors showed that therapy with steroids in prenatal care is very effective in the prevention of neonatal morbidity and mortality[16]. In a third high quality systematic review, it was assessed the intratracheal synthetic surfactant administration for children with respiratory distress resulted in clinical improvement with decreased risk of pneumothorax, pulmonary emphysema, intraventricular hemorrhage, bronchopulmonary dysplasia; decreased risk of neonatal mortality, mortality after discharge and mortality of children under one year old[8].
Potential damage	For children who receive surfactant there may be an increased risk of premature apnea, persistence of ductus arteriosus and pulmonary hemorrhage[20]. Early treatment with corticosteroids (7 to 14 days) can cause adverse effects in a short period of time (hypertension, hypercalcemia, gastrointestinal bleeding and infections) [8].
Uncertainties	The results of long-term assessments are limited because the children were assessed predominantly before school age and there are no studies that detect important neurologic outcomes. [8]

Option 3. Implement family planning focused on the prevention of teenage pregnancy and the prevention and treatment of illicit drug use during pregnancy.	
Benefits	In a review of good quality on the use of contraceptives in intervals between births, the authors concluded that contraceptive use was protective against short intervals between births. One of the studies of this review showed strong evidence of children's survival chances if the interval between pregnancies is greater than 36 months[21]. In another high quality systematic review on maintenance of treatment with opioids for dependent pregnant women, they compared the methadone and buprenorphine treatment, and it was found that methadone appears to be superior in terms of keeping the patient under treatment[15].
Potential damage	Regarding the treatment of drug users pregnant woman with opiates, they did not identify severe complications in neonates monitored by polysomnography; in contrast, one children of the methadone group had central sleep apnea and one children of the morphine group had obstructive apnea[15].
Uncertainties	More studies are needed on family planning, because although the spacing of births is associated with the practice of family planning and contraceptive use, the most available research does not explicitly address the contribution of contraceptive methods on maternal and child survival[21]. Regarding the use of methadone x buprenorphine, no significant differences were found between treatments.
4 Structure and organize education activities in health and home visits in prenatal and postpartum care.	
Benefits	In a high quality review, they compared the effect of learning and actions of groups of women participants with women who had usual care during pregnancy and childbirth. It evaluated that the performance of groups of women using learning with active methods was an important strategy to improve maternal and neonatal survival in places with poor resources[17]. In another review of moderate quality, the authors assessed whether home visits for newborns by community health professionals can reduce neonatal mortality and stillbirth. The authors evaluated the intervention package consisting of home visits for prenatal care, postpartum visits, treatment of diseases and community mobilization activities are associated with the reduction of neonatal mortality and stillbirth[7]. In a third high-quality systematic review, the authors evaluated scales of postpartum home visits of different periodicities. They showed that home visits can promote child health and maternal satisfaction, however, the frequency, time, duration and intensity of such postnatal care visits should be based on local needs[22].
Potential damage	They did not identify potential risks in this option.
Uncertainties	There was some evidence that postnatal care at home may encourage more women to exclusively breastfeed their babies. There was some evidence that home visits are associated with increased maternal satisfaction with postnatal care. [22]

The options presented do not necessarily need to be implemented jointly and comprehensively. The implementation should consider the local viability, inserting the governance of decision-making, regardless of the size of the health system (national, regional or local). It is also important to consider the barriers for implementation of options, especially those located in the field of the organization of the system and services, as well as those located in the field of culture and social representations of users and health workers. In Table 2 are described potential barriers and aspects that can facilitate the implementation of each of the four options, taking into account the dimensions of patients / individuals, health service providers, organization of services and the health system.

Table 2. Considerations on Implementation of options.

Levels	**Option 1. Qualify the attention to prenatal care through the pregnant woman's risk classification and tests management**
Patient / Individual	Pregnant women should be addressed on signs and symptoms of preterm labor and instructed to seek a health service when there is any complication. Special attention should be given to drug users patients who do not have a good adherence to prenatal care.
Health Workers	It should be made training of health workers in the use of risk classification form for premature birth and the rapid testing for syphilis in all units
Organization	It should be ensured the provision of corticosteroids for their administration during the prenatal to all women at risk of preterm birth in all health services that serve pregnant and help in births. Audit and feedback tools could increase adherence to clinical protocols related to this option[10].
System	Referral and counter-referral mechanisms, as well as suitable medical transportation guarantee for referral hospitals of greater complexity in time must be ensured.

Per level	**Option 2 - Prepare protocol for prevention and treatment of respiratory distress of the newborn.**
Patient / Individual	Women should be educated about the risk factors and warning signs of preterm threat that enable the timely consultation with the health care system. So, it is anticipated the communication and access barriers
Health Workers	Health workers should be trained in the use of risk classification form, treatment protocols for prenatal care for better quality in the provision of the service. [14]
Organization	The Health organizations should be prepared to carry out the monitoring and evaluation of the results obtained from the implementation of the options, using validated parameters for monitoring and diagnosis of preventability of death[13].
System	It should be implemented monthly coordination meetings to discuss the results of assessments and monitoring, proposing improvement actions.

Per level	**Option 3 - Implement family planning focused on the prevention of teenage pregnancy and the prevention and treatment of illicit drug use during pregnancy.**
Patient / Individual	The difficulty of the participation of the pregnant drug user to prenatal and treatment is one of the issues that should be addressed in training and intersectoral work should be well implemented.
Health Workers	Cooperation with workers from other departments should be improved, because its lack may consist in barrier to the effectiveness of this option. It should be trained the health professionals in Primary Care to address the care of adolescents, pregnant drug user and family planning activities.
Organization	The sectors involved of the municipality should be prepared to carry out the monitoring and evaluations of the results obtained.
System	The success of the intervention seems to depend more on political commitment and organizational capacity than the resource availability[14]

Per level	Option 4 - Structure and organize education activities in health and home visits in prenatal and postpartum care.
Patient / Individual	Users should have access to information in clear language, in which the group of pregnant women results in exchanges of experiences and sharing feelings. The group is a way to create bond, a fact that results in better care for pregnant women.
Health Workers	Health professionals should receive training to work with groups of pregnant women and standardize home care visits in relation to the care of the newborn.
Organization	The implementation of communication between the various UBS, standardization of clinical protocols and the implementation of the monitoring of actions should make all UBS develop similar activities in the municipality.
System	Improved communication with accessible language through local radio and newspapers, informing the activities and the importance of groups and home visits with a focus on prevention of child mortality can assist the implementation of these actions.

Additional considerations on equity of options

Option 1. Option 1. Qualify the attention to prenatal care through the pregnant woman's risk classification and adequacy of tests management

The municipality of Porto Feliz is still in the implementation phase of the Stork Network, and this is an excellent tool for monitoring the actions of this option. Notice of Primary Care with the Vacancies Center for scheduling the correct date of the ultrasound sonography (USG) test is extremely important, given that the municipality offers to all pregnant women access to prenatal care and all tests necessary in the Basic Health Units. The difficulty is in the schedule of the proper date of the USG and the report, which is often incomplete. Because of these events, women with higher income perform the test in private institutions, a fact that indicates inequality in attendance.

The lack of training for the rapid testing (syphilis, HIV and hepatitis B) in all UBS of the municipality of Porto Feliz is generating inequality because the UBS that have trained professional are not performing the procedure.

Option 2. Prepare protocol for prevention and treatment of respiratory distress of the newborn.

All pregnant women have access to prenatal care in the Basic Health Units and low complexity birth in Santa Casa de Misericórdia of Porto Feliz. Therefore, all pregnant women may be covered with this policy option and have the same availability of treatment. However, high-risk pregnant women are referred to Regional Reference Units and may not have access to the protocol.

Option 3. Implement family planning focused on the prevention of teenage pregnancy and the prevention and treatment of illicit drug use during pregnancy.

Transversality is the same theme to be developed in several areas, it involves the development of a matrix that allows guide a *new vision* of powers (political, institutional and administrative). It would also bring accountability of public officials, encouraging the integration and consequent increase in the effectiveness of policies. Since the option covers family planning with a focus on prevention of teenage

pregnancy and the prevention and treatment of pregnant drug user, actions should also be carried out in schools and Reference Centers of Social Assistance, Reference Centers Specialized in Social Assistance and community (through crafts, theater, football, etc.) to reach the entire population. For all pregnant drug user, it should be triggered the team to discuss the care in a multidisciplinary way. Parents who are not in favor of family planning activities in school should sign the document requesting that the child should not participate in the activities. These could increase the possibility of reaching in an even way the entire population.

Option 4 - Structure and organize education activities in health and home visits in prenatal and postpartum care.

The health education to the community should have a proper language and meet the needs of different population groups, including those with low education level, assessing their needs and their lifestyle, beliefs and values, desires, choices, respecting experiences the socio-political and cultural context in which they live. The municipality does not have a 100% coverage of the Family Health Strategy, so the development of a communication on births between Maternity and Primary Care (mainly for the traditional UBS areas) is very important for the puerperal visit is held as soon as possible and breastfeeding is encouraged for all women and families.

Final Remarks

It is believed that the interventions identified in the study, based on evidence and developed with the aid of the SUPPORT tools, may be capable of contributing to the reduction of perinatal mortality at the municipal level. Although some of the options have already been identified as alternatives to reduce perinatal mortality in other policy documents, the fact that they have been drawn up to meet the demands of a local team can enhance their applicability within this municipality. It should be noted that the options do not necessarily have to be implemented in this way and the application should take into account the local viability. Consideration of issues related to equity, aimed at work, is essential for the proposed options do not produce different results for the groups identified in the same municipality.

The Evidence Briefs for policy on the reduction of perinatal mortality was realized within the scope of the Professional Master's Degree Program in Public Health in Health Institute, but had the support of a multidisciplinary team in the municipality of Porto Feliz. The great receptivity of the municipality to the proposal allowed the identification of a priority problem for municipal management, formulating options for addressing the problem based on the evidence available and discussion of the main barriers and implications of the implementation of the options on equity. Therefore, the Evidence briefs included the scientific evidence and local evidence, increasing the chances of appropriation of the results.

This methodology proposed by EVIPNet (Evidence Informed Policy Network), is located in the municipal level and accompanied by the regional level, it could empower municipal health departments to achieve a quality public system through informed policy by evidence.

Bibliographical references

1. Beverley SJ, Jeremy GM, George WA, Boerset M, Andersson N, Hamel C.et al. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. BMC Medical Research Methodology. 2007; 7:10 doi:10.1186/1471-2288-7-10

2. Ministério da Saúde. Datasus. Informações de Saúde – TABNET. Brasília (DF) [accessed on January 8, 2015]. Available in http://www2.datasus.gov.br/DATASUS/index.php?area=0205..

3. Davey MA, Watson L, Rayner JA, Rowlands S. Risk scoring systems for predicting preterm birth with the aim of reducing associated adverse outcomes. Cochrane Database of Systematic Reviews 2011, Issue 11. Art. No.: CD004902. DOI:10.1002/14651858.CD00 [accessed on June 24, 2015. Available at: http://www.ncbi.nlm.nih.gov/pubmed/26490698

4. Dodd J M, Jones L, Flenady V, Cincotta R, Crowther C A. Prenatal administration of progesterone for preventing preterm birth in women considered to be at risk of preterm birth. Cochrane Database of Systematic Reviews, Issue 8, Art. No. CD004947. DOI: 10.1002/14651858.CD004947.pub1[accessed on June 24, 2015] Available at: http://www.ncbi.nlm.nih.gov/pubmed/23903965.

5. EVIPNet: Rede para Políticas Informadas por Evidências. [SUPPORT tool] Brasília (DC). [accessed on August 15, 2014]. Available at: http://brasil.evipnet.org/.

6. UNICEF – Fundo das Nações Unidas para a Infância. Situação Mundial da Infância. Nova Iorque, 2008a [accessed in October 2014]. Available at: http://www.unicef.org/brazil/pt/sowc2008_br.pdf.

7. Gogia S, Sachdev HS. Home visits by community health workers to prevent neonatal deaths in developing countries: a systematic review. Bull World Health Organ. 2010; 88(9):658-666B

8. Halliday HL, Ehrenkranz RA, Doyle LW. Moderately early (7-14 days) postnatal corticosteroids for preventing chronic lung disease in preterm infants. Cochrane Database of Systematic Reviews. Issue 7, Art. No. CD001144. DOI: 10.1002/14651858.CD001144.pub3 [accessed on June 24, 2015. Available at: http://www.ncbi.nlm.nih.gov/pubmed/12535400

9. Imdad A, Yakoob MY, Siddiquis S, Bhutta ZA. Screening and triage of intrauterine growth restriction (IUGR) in general population and high risk pregnancies: a systematic review with a focus on reduction of IUGR related stillbirths. BMC Public Health. 2011; 11 (Suppl 3):S1.

10. Ivers N,Jamtvedt G, Flottorp S, Young JM, Odgaard-Jensen J, French SD, et al. Audit and feedback:effect on professional practice and healthcare outcomes. Cochrane Database of Systematic Review, London, v.1, 2012. Art. CD000259.40. [accessed on November 12, 2015] Available at: http://www.ncbi.nlm.nih.gov/pubmed/22696318.

11. Lansky S, França E, Perpétuo IH, Ishitani L et al. A mortalidade infantil: tendências da mortalidade neonatal e pós-neonatal em 20 anos do SUS. Brasília (DF): Ministry of Health, 2009.

12. Lavis JN, Oxman AD, Lewin S, Fretheim A: SUPPORT Tools for evidence-informed health Policymaking (STP). Introduction. Health Research Policy and Systems[periódicona internet] 2009 [accessed on October 10, 2014];7 (Suppl1): I1doi:10.1186/1478-4505-7-S1-I1. Available at: http://www.health-policy-systems.com/content/pdf/1478-4505-7-S1-I1.pdf.

13. Ministério da Saúde. Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Síntese de Evidência para Políticas de Saúde: reduzindo a mortalidade perinatal. 2 ed. Brasília (DF); 2014.

14. Ministério da Saúde. Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Departamento de Ciência e Tecnologia. Síntese de evidências para políticas de saúde: mortalidade perinatal. Brasília (DF); 2012. 43 p. (Série B. Textos Básicos de Saúde).

15. Minozzi S, Amato L, Bellisario C, Ferri M, Davoli M. Maintenance agonist treatments for opiate-dependent pregnant women. Cochrane Database of Systematic Reviews. 2009. Issue 8, Art. No. CD006318. DOI: 10.1002/14651858.CD006318.pub2 [accessed on June 24, 2015] Available at: http://www.ncbi.nlm.nih.gov/pubmed/24366859.

16. MwansaKambafwileJ, CousensS, HansenT, LawnJE. Antenatal steroids in preterm labour for the prevention of neonatal deaths due to complications of preterm birth. International Journal of Epidemiology. 2010; 39 (Suppl 1): i122-i133. 83.

17. Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A, et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013; 381: 1736–1746

18. Secretaria Estadual da Saúde. Manual prático para implementação da Rede Cegonha [accessed on March 10, 2015]. Available at: http://www.saude.pi.gov.br/ckeditor_assets/attachments/138/DOCUMENTOS_REDE_CEGONHA.pdf

19. Shahrook S, Mori R, Ochirbat T, Gomi H. Strategies of testing for syphilis during pregnancy. Cochrane Database of

Systematic Reviews. Issue 8, Art. No. CD010385. [accessed on June 24, 2015] DOI: 10.1002/14651858.CD010385.pub10. Available at: http://www.ncbi.nlm.nih.gov/pubmed/25352226

20. Soll R, Özek E. Prophylactic protein free synthetic surfactant for preventing morbidity and mortality in preterm infants. Cochrane Database of Systematic Reviews. Issue 8, Art. No. CD001079. DOI: 10.1002/14651858.CD001079.pub2[accessed on June 24, 2015]. Available at: http://www.ncbi.nlm.nih.gov/pubmed/20091513

21. Yeakey MP, Muntifering CJ, Ramachandran DV, Myint Y, Creanga AA, Tsui AO. How contraceptive use affects birth intervals: results of a literature review. Studies in Family Planning. 2009; 40(3): 205-214.

22. Yonemoto N, Dowswell T, Nagai S, Mori R. Schedules for home visits in the early postpartum period. Cochrane Database of Systematic Reviews. 2013;(7):1-94. [accessed on June 24, 2015] Available at: http://www.ncbi.nlm.nih.gov/pubmed/23881661.

Experience report of the implantation of an Evidence Group in a medium-sized municipality of the state of São Paulo, Brazil

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Abstract

The Evidence Informed Policy Network (EVIPnet) proposes a focused approach to participatory planning and aims to promote sustainable partnerships between policy makers, researchers and civil society to use the best scientific evidence, contextualizing the reality of the country on public health issues The purpose of this article 1) describe the implementation experience of Evidence Group in a medium-sized city of State of Sao Paulo and 2) describe the development stages next to a multidisciplinary team for the definition and characterization of a priority health problem the development of an Evidence Briefs for policy. For the initial discussions of the evidence group, we used the technique of brainstorming, having been appointed the main organizational problems of municipal health area. Through this study, we contribute to the production of knowledge, in order to overcome some challenges in Public Health practices and it may serve as a basis for the use of evidence for decision-making and preparation of action plans municipalities with similar characteristics.

Key Words: EVIPNet, SUPPORT tool, Evidence Briefs for Policy

Introduction

A historical evaluation of the health system in Brazil leads us to think that since the implementation of the Brazilian United Health System (SUS) to the present day there has been a breakthrough, but we still see unacceptable epidemiological situations and dehumanized health practices. Since 1988, Brazil has established a dynamic and complex health system, based on the principles of health as a citizen's right and duty of the state. However, the implementation of SUS was complicated due to the state support to the private sector, by concentration of health services in the most developed regions and the chronic underfunding[5].

Brazil and other low and middle income countries have limited resources to meet the challenges of the health system and require high-quality evidence to use its resources efficiently. The scientific evidence is a key building block to improve the situation of the public health. If the managers of the health sector and policy makers ignore evidence about the causes of the problems or what is the best practices for solving them, they are in risk of wasting precious resources on programs and policies conducted improperly. The final result of ignoring scientific evidence in the planning and evaluation of programs and sector policies is worsening the population's health conditions[2].

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The need to produce policies informed by evidence resulted in the creation of a network called Evidence Informed Policy Network (EVIPNet), whose main purpose is to strengthen policies and public health systems through systematic use of research evidence. It is an initiative of the World Health Organization, started in 2004 to promote the systematic use of evidence in health policy and aims to establish mechanisms to facilitate the use of scientific production in the formulation and implementation of health policies. It operates in regional, national and global level. There are groups formed in Asia (since 2005), Africa (since 2006), the Americas/Pan American Health Organization (since 2007), the Mediterranean region (since 2009) and Europe (since 2012). It uses a methodology focused on participatory planning and aims to promote sustainable partnerships between policy makers, researchers and civil society to use the best scientific evidence, contextualizing the reality of the country on public health issues. This pioneering initiative was endorsed at the 58th Meeting of the World Health Assembly in Geneva and remains in the legislative agenda of numerous international organizations. In America, the creation of the Network has been producing positive effects on policy formulation (WHO - EVIPNet) [6].

In Brazil, in order to stimulate the use of evidence in SUS, the Department of Science and Technology (Decit) of the Secretariat of Science, Technology and Strategic Inputs (SCTIE) of the Ministry of Health (MOH) in 2007, presented to the Pan American Health Organization / World Health Organization (PAHO/WHO) a proposal to join the EVIPNet Americas, in order that the country participate in global collaborative network (Global EVIPNet) for the formulation, implementation, monitoring and evaluation of policies informed by scientific evidence. An example of the influence of EVIPNet Brazil in the development of local policies can be identified in the municipality of Piripiri, where in 2010, among other initiatives, the local health system management has formulated and implemented a set of choices informed by evidence to reduce perinatal mortality. This initiative has produced important results in subsequent years . The example of Piripiri could be followed in the inland cities of São Paulo with the implementation of Evidence Centers in Municipal Health, in order to strengthen public health policies[4].

In São Paulo, the Institute of Health (IS) has been working since 2014 in disseminating SUPPORT tools *(Supporting Policy Relevant Reviews and Trials)*, seeking to involve the state and municipal managers to use evidence in making decisions, and encourage the development of Evidence Briefs for policy in the context of its Professional Master's Program in Public Health, whose target audience are workers of various levels of management and health care of the Brazilian Unified Health System (SUS-SP). As a result of work carried out under the Master's degree in the Health Institute, the author proposed to carry out an Evidence Briefs for policy in a medium-sized municipality, which led to this work. The motivation for the development of the work was the determination, after the opportunity to work in several municipalities, that public policies are developed without scientific basis. This perception is corroborated by other authors who reflect on the gap between scientific output and decision-making. If on one hand the scientific evidence is considered an important element for the development of effective policies, on the other hand the systematic use of research results by decision makers is still incipient, although recent indicators show that its value has been realized (Campbell *et al.*, 2009)[1].

Thus, proposed the preparation of an Evidence Briefs for policy in the municipality and creating an Evidence Group culminating in the

two objectives of this article: 1) describe the implementation experience of a Evidence Group (GE) in a medium-sized municipality of São Paulo, with support from the Health Institute Evidence Center and 2) describe the development stages next to a multidisciplinary team for the definition and characterization of a priority health issue for the development of an Evidence Briefs for policy.

Methodology

1) Process for constitution of the GE in the municipality

GE deployment experience occurred in a medium-sized municipality of São Paulo, which has a population of 51,320 inhabitants and is situated 110 km from the metropolitan area of São Paulo. Its economy is varied, mainly based on agriculture, and rely on the industrial, commercial and service provision sectors. The Municipal Health Network has 10 Basic Health Units, nine Family Health teams, and a team of the Program of Community Health Workers (PACS) and two parameterized teams of Primary Care. It also has two Medical Specialty Centers and Dental Specialty Center. In addition, the municipality has the Santa Casa de Misericórdia, philanthropic hospital accredited with the Brazilian United Health System (SUS) and in municipal intervention since December 2007. Santa Casa offers medium complexity services: medical clinic, surgical, obstetrics and gynecology, pediatrics and diagnostic support and also features an unit for Emergency contracted by the Health Department to provide urgent and emergency services 24/7.

The first step in the establishment of GE was the submission of the proposal of the EVIPNet to the municipal manager and how it could benefit the municipality, identifying policy options for addressing the priority health problems.

The appointment of professionals to compose the Group was made by the manager. So, in order to have a comprehensive view of the local health system, we suggested that the group was multidisciplinary and with participants from different sectors of the Municipal Health Department.

The GE was composed by ten members, and they are coordinators of the Municipal Health Department, employees of the Primary Care, of the Health Surveillance, of the Maternity of Santa Casa and members of the Infant Mortality Committee.

The second step, after the establishment of the Group was to draw up an agenda with fortnightly meetings to better use the discussions. It was also agreed that, it only would part of the Group those who participated in the entire process of preparation of the Evidence Briefs for policy.

Briefly, the first meeting had the objective of presenting the proposal of the EVIPNet Network and SUPPORT tools. Since the group was constituted during the meetings, there was a need to resume this presentation at various times. The Group also discussed the organization of the local health system and health indicators. The following discussion supported the definition of the priority issue for the development of Evidence Briefs for policy and its main causes, which will be presented in greater detail below. The meeting also contemplated the training to search for evidence in the Virtual Library on Health and Health Systems Evidence, selection of systematic reviews, reading and assessing the quality of studies, preparation of policy options and discussions on the barriers for implementation and equity.

Table 1 shows the agenda of the GE meetings and the main issues discussed in each session.

Table 1. Meeting agenda of GE, 2015.

Date	Main issues discussed
01/23/15	Presentation of the methodology of the EVIPNet / SUPPORT tool.
01/28/15	Discussion on the organization of local health departments and health indicators. The group highlighted the increase in infant mortality and cardiovascular disease. They found that infant mortality was a priority issue to be developed. Most participants of the meeting were nurses and an administrative employee. There was a new request to the municipal manager for the group to be multidisciplinary.
02/20/15	Discussion on the Millennium Development Goals and programs of the Social Welfare Department. We held a brainstorming on the management issues related to infant mortality. Comparisons of infant mortality rates with Municipal, Regional, State and Federal indicators. There was the integration of the Social Assistant in the group.
02/26/15	Discussion on the management issues related to infant mortality. There was integration of nutritionist in the group.
03/05/15	Discussion on the definition of the problem and the group stressed that the main problem of infant mortality was related to primary care. There was a discussion on the search strategy, the importance of the choice of keywords and how it should be entered in the databases.
03/12/15	Presentation of databases with emphasis on *Health Systems Evidence* and Virtual Health Library databases. There was maternity nurse integration into the group.
03/25/15	Resumption of EVIPNet methodology and discussion of political interference in health and health judicialization. Some members said they were having difficulty working with evidence. It was requested the integration of other members to the group (representatives of primary care and maternity), since most of them were nurses and representatives of the administration.
04/08/15	It was integrated into the group 1 (one) general practitioner (who introduced himself as a general practitioner), 1 (one) pediatrician, 1 (one) nurse (they were called because they are working in primary care and have knowledge of English) and a member who performs the following functions in the municipality: health driver, coordinator, councilor, trained in law. New presentation of EVIPNet methodology and that the group had been discussed so far. It also discussed the organization of the health system, structured in Medical Care model and reported that the population pressures that UBS make prompt service and not the basic programs.
04/23/15	The Secretary of Health approved the implementation of a municipal NEV. However, it was decided to keep the group linked to the NEv of the Health Institute until the end of Evidence Briefs for policy and review the possibility to apply for accreditation of a NEv with the coordination of EVIPNet-Brazil after the end of this work. It was conducted training in the Virtual Health Library platform. There were 3 members for each computer and simulation for evidence was made.
05/06/15	It was conducted training in the databases of the *Health Systems Evidence* and Pubmed. Evidence search simulation, sending texts chosen via email. After taking part in a Workshop of the EVIPNet, the project coordinator received suggestions from the Workshop coordinator and participants to seek perinatal data, since it is the leading cause of infant mortality. Research records of child and fetal deaths were then requested.
05/27/15	Discussion of research records of infant and fetal mortality, finding that the Committee needs readjusting, since professionals who do research are the same who carried out the visits to children (need for an external look). It was discussed that the sheets were generally being closed as primary care problem, but we noted that the vast majority was going through problems at the hospital. With this information, we changed our focus and went back to problems definition stage.
06/10/15	Presentation of the series of infant mortality of the municipality since 2000. Discussion of problems for maternity management, especially for high-risk pregnant women sent by the neighboring municipality and the lack of surfactant in Santa Casa, lack of ICU vacancies in the regional regulatory system.
06/23/15	Meeting in the Health Institute to define the search strategy.
06/24/15	Confirmation of the search strategy and reading the abstracts to select articles for thorough reading.
07/15/15	Continuation of the previous process, reading the abstracts to select articles for thorough reading. Grouping of texts on subjects.
07/29/15	Defining options and evaluations of systematic reviews.
08/12/15	Continued evaluations of systematic reviews.
08/26/15	Characterization of options.
09/09/15	Discussion on implementation barriers and options on equity.

2) Process for establishment of the evidence brief problem and its causes

The SUPPORT tools are designed to help policymakers and those who support them to improve one aspect of their work or make it more efficient - that is, the location and use of research evidence to support the formulation of health policies. These tools include the following steps for knowledge translation: (I) Definition of Priorities for Definition of Programs / Policies. (II) Search of Evidence. (III) Definition of Options for the Policy Approach. (IV) Data Extraction and (V) Preparation of Evidence Briefs for policy. The step of future considerations is made by: (I) Deliberative dialogue. (II) Considerations for Implementation. (III) Monitoring and Evaluation.

A critical step in the development of the Evidence brief is the definition of the problem and its description.[3] This stage was developed by GE through the brainstorming technique, in which participants discussed the main municipal health problems without a script previously prepared. We also analyzed municipal secondary data from SUS information systems (SIM - Mortality Information System and SINASC - Live Birth Information System).

By discussing the Municipality's problems, those that stood out from the beginning were the increase in the number of cases of cardiovascular disease and infant mortality. The process for definition of the priority theme has evolved to the extent that the group has deepened the analysis of health indicators and research records of child and fetal deaths. After several discussions on the definition of the problem to be worked out, the Group chose the perinatal mortality to develop Evidence Briefs for policy.

After defining the priority problem, they sought to characterize it through the indicators and identify determinants sites of this problem, related to living conditions and the health system organization. However, the choice was due to the importance of the issue because of perinatal mortality is an indicator of evaluation of municipal management and the perception of the group on the need for health system organization to address the problem.

The following steps for the preparation of the Evidence brief followed the methodology proposed by the SUPPORT tools.

Results

Characterization of infant and perinatal mortality in the municipality

The analysis of the trend of infant mortality in the municipality showed that the coefficient had fallen from 18 to 11.8 per thousand live births between 2001 and 2010. However, in subsequent years, there was an increase in deaths and the ratio reached 13.8 per thousand live births in 2013, with a predominance of the neonatal component, which represented about 50% of infant deaths. Moreover, after the investigations carried out by the Infant Mortality Committee, it was found that most deaths were avoidable, causing great discomfort in the leaders. Similarly, the analysis of the evolution of perinatal mortality (deaths occurring between the 22nd week of gestation up to the 7th day after birth) concerned the team because it was found increase from 12 to 16/1000 live births in the same period. Another worrying fact is that the investigation of fetal deaths pointed out that 50% of deaths were related to preventable causes.

Thus, it was defined as a priority issues the reduction of perinatal mortality, due to the significant number of preventable fetal deaths and concentration of infant deaths in the early neonatal period.

Local determinants of perinatal mortality

Discussions on how the municipality is organized to combat perinatal mortality were

performed considering issues of the municipal health system, which are the context for the development of these actions, as well as the different levels of care, from Primary Care to the referral for levels of greater complexity. In all sectors were detected the lack of evaluation and monitoring of data by the Health Department of the municipality. Table 2 presents a summary of the main problems identified by the Group.

Table 2. Key problems identified by the Evidence Group, related to perinatal mortality, 2015.

Level	Problems
MUNICIPAL HEALTH DEPARTMENT	- Incipient implementation of the guidelines of the Family Health Strategy. - Lack of a Permanent Education policy. - Lack of proposals for the use of health care protocols. - Lack of guidelines for the care and administrative procedures in the Basic Health Units. - Health Surveillance focused on the prevention of transmissible diseases and blocking them. - Information systems distributed across multiple sectors and data not discussed among the professionals involved. - Infant Mortality Committee composed of professionals involved directly in care, and sometimes the same professionals attending the death conducting the investigation. - Use of political influence for distinguished service of citizens in the public health system disregarding the regulation flows. - Constant change of management professionals (exchange of three Secretaries of Health in the municipality since 2013 with a change in the coordination of programs) - Fragilities in the support process from the Regional Organizers of Primary Care.
PRIMARY CARE	- Low participation of pregnant women to prenatal care, especially pregnant drug users. - Difficulties in the management of recurrent urinary infections. - Lack of accountability of professionals and not conducting an active search for pregnant not attending frequently. - Lack of interest of mothers in taking care of children's health. - Lack of family planning and high number of pregnant teenagers - The Pregnant women and children have health care only with the obstetrician and pediatrician and not with the family doctor. - The Community Health Workers do not perform the proper follow-up in home visits to pregnant women. - Nurses did not perform nursing consultations. - Puerperal visits made late, within 15 days, leading to high rates of early weaning.
MATERNITY	- The institution receives many cases of high complexity patients of a small municipality, and the municipality studied is a reference to low complexity deliveries. - Lack of Intensive Care Unit vacancies in the region, which further overloads the service. - Lack of care protocols focused on the management of premature newborns. - The need for better communication between staff on the sizing and storage of essential drugs for the prevention of neonatal mortality (e.g.: surfactant).

Discussion

Several positive aspects can be highlighted in this report and experience. The process of constitution of the GE in the municipality led to the discussion of problems in the organization of the local health system and the identification of a priority health issue for the development of an Evidence Briefs for policy. The brainstorming proved to be an appropriate strategy for the definition of the problem and its causes, although some difficulties deserve to be pointed out. Group members were integrating the extent that the meetings were held, which required the presentation of the EVIPNet and sometimes

the work proposal in the process; the choice of brainstorming without a previously established script sometimes led to discussion of other points beyond the priority problem and its causes, this fact has caused many issues discussed in the GE, caused immediate interventions in the work process in the municipality. Moreover, it was noted that the Group showed interest in defining the options with the main points discussed, anticipating the search for evidence for the definition of policy options, which led to the return of previous steps to the appropriateness of the methodology.

Regarding the preparation of the Evidence Brief, there was great interest in the Group in being qualified to the development of all steps recommended by the SUPPORT tool, from the search of evidence to the discussion on equity and barriers for implementing options. The options have been prepared based on evidence identified in searches and in the Group's point of view, and responded largely to the problems raised in the brainstorming.

After completion of the Evidence Briefs for policy, the Group intends to implement the steps for future considerations proposed by EVIPNet, supported by the Health Institute Evidence Center. The next step will be the completion of the Deliberative Dialogue. The main results of the deliberative dialogue should also be documented in a report. Policy dialogues allow research evidence to be considered along with the views, experiences and tacit knowledge of those who will be involved in (or affected by) future decisions related to a high priority issue[3]. It is also up to the Group to support the implementations of policy options defined by the municipal administration and involve base professionals who will work in the project, thus reducing the resistance to success. It should also be defined strategies for evaluation and monitoring, since the creation of appropriate parameters and indicators is a key step in the development and implementation of public policies. The evaluation of barriers prior to the implementation of the proposal and the definition of monitoring and evaluation strategies of the results arising from the implementation of the options may result in the reduction of perinatal mortality and increasing quality of life of the pregnant woman and the child.

Final Remarks

All stages in the development of an Evidence Briefs for policy are important, but the definition of the problem with your description is the fundamental step because it is the time when the multi-professional team has the perception of the entire municipal health system, not only looking at the sector where they work.

Implementation of Evidence Groups in Health Municipal Departments is an important strategy for improving management processes because the team stops to perform the immediacy work to carry out a health management with planning, bringing important insight for administrative and welfare changes based on evidence. The continuity of these Groups is a challenge for the health system, because high staff turnover in coordination positions of a medium-sized municipality is very large. Therefore, it is essential that the Regional Health Departments are empowered to support municipalities in the continuity of this process.

By organizing a group that discusses certain issues in the municipality and the best way to face it, we are expanding perceptions to situations that were previously unnoticed or that there was no motivation to change it. A new look, with scientific support, can be implemented with the construction of new knowledge and strengthening management in order to guarantee SUS principles.

We hope, through this study, to contribute to the production of knowledge, in the sense of overcoming some challenges in the practices of Collective Health and that it can serve as a basis for the use of evidence for decision making and preparation of action plans in municipalities with similar characteristics.

References

1. Campbell MD, Redman S, Jorm L, Cooke M, Zwi AB, Rychetnik L. Increasing the use of evidence in health policy: pratice and views of policy makers ad researches. Australian and New Zealand Health Policy. 2009;6:21.

2. Dias RI, Barreto JOM, Souza NM. Desenvolvimento atual da Rede de Políticas Informadas por Evidências (EVIPNet Brasil): relato de caso. Rev Panam Salud Publica. 2014;36(1):50–6.

3. Lavis JN, Oxman AD, Lewin S, Fretheim A: SUPPORT Tools for evidence-informed health Policymaking (STP). Introduction. Health Research Policy and Systems. 2009 [accessed on October 10, 2014];7 (Suppl1): I1doi:10.1186/1478-4505-7-S1-I1. Available at: http://www.health-policy-systems.com/content/pdf/1478-4505-7-S1-I1.pdf

4. Ministério da Saúde. Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Departamento de Ciência e Tecnologia. Síntese de evidências para políticas de saúde: mortalidade perinatal. Brasília (DF); 2012. 43 p. (Série B. Textos Básicos de Saúde)

5. Pain J, Travassos C, Almeida C, Bahia L, Macinko J. Saúde no Brasil 1: O sistema de saúde brasileiro: história, avanços e desafios. The Lancet 2011 [accessed on October 8, 2014] DOI:10.1016/S0140-6736(11)60054-8. Available at: http://www.thelancet.com.br.

6. WHO-World Health Organization. Evidence Informed Policy Network – EVIPNet [home page]. Geneva [s.d]. [accessed on August 15, 2014]. Available at: http://global.evipnet.org/pt/sobre-o-evipnet-3/

Health Technology Assessment – Scientific Reports

A rapid review on rapid reviews

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Abstract

Rapid reviews in the context of health decisions have been widely used and gained legitimacy over time. Under various names, rapid reviews have been employed as in the process of incorporation, change and exclusion of health technologies in the macro and meso levels of the health system, as in clinical decisions and even in supporting the development of health policies. The purpose of this rapid review was to analyze the scientific literature on rapid reviews, with emphasis on methodological aspects. From a search performed in five scientific literature databases twelve studies were selected for analysis. It was found that, despite the growing discussion about the rapid reviews in recent years, there is still no consensus of the international community regarding their definition, the time of execution of this type of study, the standardization of a methodology and its applications. Seminar held in Canada in 2015 highlighted the growing importance of rapid reviews, their practices and gaps. Three key areas that emerged in the discussion were: how to conduct a rapid review and understand their validity and utility, and how to improve access to them. Given the nature of rapid reviews they often are not published, so it is important to create opportunities to share this information. Brazil, as example of some countries, developed methodological guidelines for the preparation of rapid review, which is in its fourth edition.

Keywords: rapid review, systematic review, and health technology assessment

Introduction

The rapid reviews used in the context of making health decisions have been widely used and gained legitimacy over time. Under various names, rapid reviews have been employed both in the incorporation process, change and exclusion of health technologies in the macro and meso levels of the health system, with respect to the clinical decisions and even supporting the development of health policies.

In Brazil, although the development of technology assessment area is relatively recent, rapid reviews have also been used for making recommendations on the incorporation of health technologies process. Novaes and Elias[12] analyzed retrospective data from records and documents produced by Decit - Department of Science and Technology and the CITEC - Technology Incorporation Committee, both the Ministry of Health, from 2008 to 2010. Two types of studies were identified, the Technical Note of Rapid Review (NTRR) and the Technical and Scientific Report (PTC). The NTRR, defined as evidence brief document that values systematic reviews, assessments of international agencies technologies and clinical trials were produced by an internal team of the Decit, with average development time from ten to twenty days. PTC, defined as evidence brief document of the literature based on structured search, including all studies that meet quality criteria and critical assessment of evidence were produced by internal team or commissioned from institutions members of REBRATS - Brazilian Network for Health Technology Assessment, with an average development time of two to four months. The authors considered positive the increase in production of both types of studies, by performing a quick evidence brief

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that previously relied almost exclusively on expert opinions. However, they warn about the necessary care in the preparation of recommendations on the use of the assessed technologies.

In 2007, the Ministry of Health launched the book Methodological Guidelines for the Preparation of Technical and Scientific Opinions, which is currently in its fourth edition. These guidelines have been disseminated and used as a reference in courses on assessment of health technologies, and are recommended in the preparation of opinions by Rebrats and Conitec - National Commission for Technology Incorporation of SUS.[10,15]

The audience intended for these guidelines are the professionals involved in the processes related to the assessment of health technologies in general, since the incorporation, monitoring the effectiveness of interventions and exclusion. The necessary professional requirements for the preparation of rapid reviews called technical and scientific opinions include reading ability in English, familiarity with the Internet, knowledge of the main literature databases and clinical epidemiology of knowledge such as study designs and effect estimates .[10]

Regarding the use of evidence for health policy, the country follows the recommendations of Evidence Informed Policy Network (EVIPNet Brazil), which is based on the SUPPORT tools - SUPporting POlicy relevant Reviews and Trials. EVIPNet Brazil, coordinated by the Ministry of Health, has encouraged the production of evidence briefs for policy to guide public health policies through capacity building and creating Evidence Centers in the states and municipalities.[2]

From a broad definition of the term review, understood as *"see, inspect or examine a second time and again"*, Grant and Booth[5], it was identified and analyzed fourteen types of review, including a rapid review. Some strengths were identified by these authors in rapid reviews, such as the intention to use a rigorous and explicit method like systematic reviews, develop a well-defined research question, conduct a search strategy focused mainly on reviews, and report the likely effect of the options used in the study. Among the weaknesses of the rapid review were highlighted the risk of introducing bias as a result of the limited time to perform more extensive search of the literature, as well as failures in the process of assessing the quality of the included studies.

Purpose

Analyze the scientific literature on rapid reviews to the health decision-making, with emphasis on methodological aspects.

Method

It was conducted a search for articles on February 26, 2016, in the CRD databases - Center for Reviews and Dissemination[III], PubMed[IV], Tripdatabase[V], BVS Portal Evidência[VI], Health Systems Evidence[VII] using the terms "rapid review", "rapid reviews", "*revisão rápida*" and "*fast revisión*". The filters used were: publication date and the following terms, humans, systematic reviews, overview of systematic reviews, *revisão sistemática* and *avaliação de tecnologias de saúde*, according to the characteristics of each database.

[III] Search strategy: (rapid review) OR (rapid reviews): IT FROM 2011 TO 2016

[IV] Search strategy: "rapid review"[All Fields] OR "rapid reviews"[All Fields] AND (systematic[sb] AND "humans"[MeSH Terms])

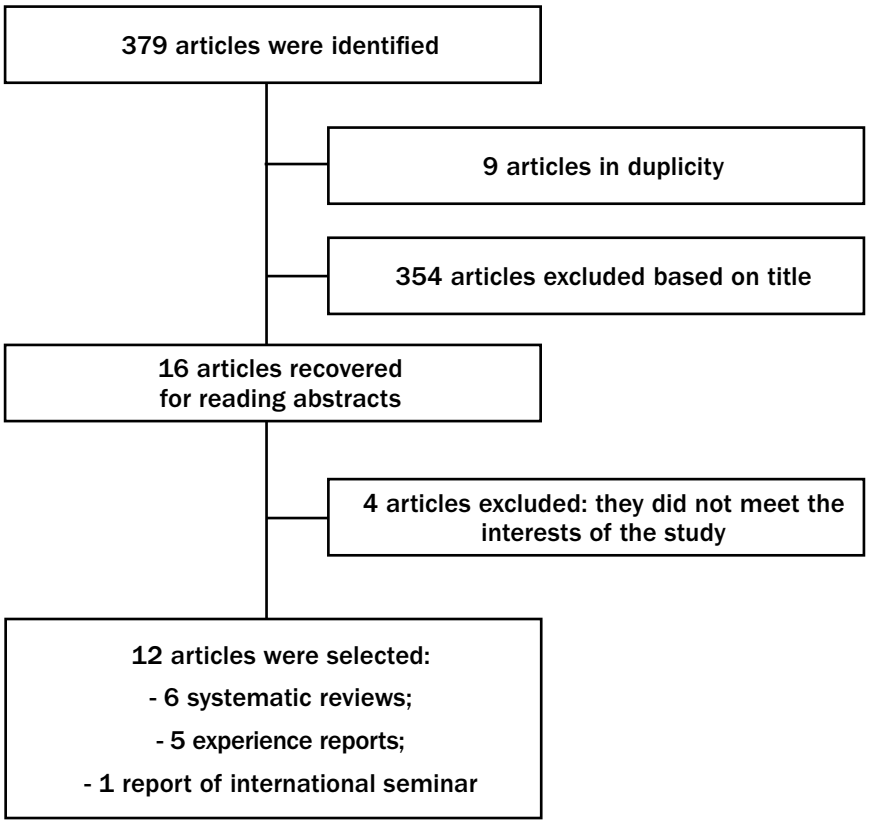
[V] Search strategy: "rapid review" or "rapid reviews" from: 2011 - Filter: systematic reviews

[VI] Search strategy: "rapid review" OR "*revisão rápida*" OR "*revisión rápida*"- Filters: ATS and overview

[VII] Search strategy: "rapid review" - Filter: overviews of systematic reviews, systematic reviews of effects, systematic reviews addressing other questions

The search and selection of articles were performed by one of the authors. Out of 379 articles identified, 354 were excluded after reading the titles and 9 because they were repeated. After reading the abstracts, 4 of them were excluded due to they do not meet the interests of this study. Therefore, 12 articles were selected for analysis, and 6 systematic reviews, 5 experience reports and 1 report of an international seminar (attached flowchart).

Figure. Flowchart of included studies.



Each of the authors made the reading and relevant data extraction of half of the selected articles. The quality assessment of the systematic reviews was made independently by the authors through AMSTAR - Assessing the methodological quality of systematic reviews[14] - instrument. Data analysis was carried out by the two authors.

The attached table provides a brief information on the analyzed reviews.

Main results

This review did not include all possible terms used to denominate rapid reviews, and did not conduct searches in other relevant databases and gray literature, which certainly limited the number of articles on the topic. Ganann *et al.*[4], for example, using various other terms and databases could select forty-five articles on the methodological aspects. Compared to the requirements of a

Table. Brief information about the analyzed reviews.

Study	Purpose	Method	AMSTAR
Watt et al. (2008)[19]	Assess current practice in preparing rapid review by ATS organizations, both internationally and in the context of Australia, and assess the availability of peer review literature on the methodology used in the preparation of these reviews.	For the part of the assessment of the availability, a systematic search was conducted in the databases: Cochrane Library, EMBASE, MEDLINE and Australian Medical Index. 12 relevant studies were selected: 1 guideline summary, 3 program evaluations, 2 comparative studies, 2 method studies, 3 comments and 1 research.	4/11
Ganann et al. (2010)[4]	Analyze methods used in rapid review and implications of methodological simplification in relation to the accuracy, bias and results.	Comprehensive search in various databases, including gray literature, limited to articles in English. Search terms: 'realis* review, 'realis* synthesis', 'realis* evaluation', 'realis* approach,' rapid literature review), rapid systematic review, rapid scoping review, rapid review, rapid approach, rapid synthesis, rapid evidence assess*, metamethod, meta method, meta-evaluation, meta evaluation. Out of 70 articles selected, 45 were methodological and 25 were examples of various methodological approaches.	6/11
Harker and Kleijnen (2012)[6]	Assess the methods used in the RR compared to the processes already established for RS, such as searching, selection, quality assessment, data extraction and evidence brief, and relate to the time required to perform RR.	Search in Cochrane Library, CRD, and specific bases of some countries, limited to publications in English. Terms used: 'rapid review', 'rapid appraisal' or 'rapid assessment', with filter for health technology assessment 49 articles were selected.	6/11
Hartling et al. (2015)[7]	Understanding the range of products that are considered rapid, in which contexts that are demanded, for what purpose they are produced, their methods and resources differ from standard systematic reviews and among themselves, and empirical data are available to judge the impact the specific methodological changes on the reliability, validity and usability of these rapid products.	A combination of systematic review and interviews with key people who make RR. Search in various databases, including gray literature. 32 articles were selected and 18 people were interviewed. Terms used in the search: rapid or mini or pragmatic or targeted or focused or brief, systematic or evidence or data or knowledge, review* or synthesis* or HTA or health technology assessment*.	6/11

Featherstone et al. (2015)[3]	This study summarizes the findings, conclusions and recommendations of published review articles, which examine Rapid Reviews.	A search for systematic literature in Ovid Medline, Ovid EBM Reviews, Cochrane Methodology Register and EPC Program's Scientific Resource Center (SRC) Methods Library was performed in October and November 2013. (The search strategy is in the Appendix) "A Scopus citation reference" and the gray literature were searched as well. In February 2015, an update of the search was made at the base of Ovid Embase. The publications were screened by 2 independent reviewers. 12 review articles on "Rapid Reviews" were identified. 1 reviewer extracted data on methods and how they are compared with the systematic reviews.	6/11
Tricco *et al.* (2015)[16]	Analyze fast approaches review, guidance, impact and comparisons through a review of the scope.	Searches were conducted in Medline, Embase and the Cochrane Library and complemented by searches of RR reports posted on websites of RR producers. Out of 101 studies selected, 47 were unpublished RR, posted on websites.	8/11

systematic review, other limitations of this study were the search and selection of articles being made only by one of the authors.

Among the articles selected, they found six systematic reviews. According to the criteria of AMSTAR instrument, five were considered moderate reviews with methodological quality and one with low quality. However, all these studies have proved to be capable enough to answer the research question.

After analyzing the articles, it was found that, despite the growing discussion about the rapid reviews in recent years, there is still no consensus of the international community regarding the definition of the term rapid review at the time of execution of this type of study, the standardization of a methodology and its applications.[3, 4, 6,7, 16, 18]. But some progress can be noticed, as well as in Brazil, important international organizations conducting rapid reviews already have general guidelines about their products and processes, such as NICE - *The National Institute for Health and Care Excellence*, and CADTH - *The Canadian Agency for Drugs and Technologies in Health*.

As justification for increasing production of rapid review, the studies pointed out that a systematic review, although the study-design with higher level of evidence, time consuming and resource aspects that in a real situation are obvious barriers to their implementation. That is why the rapid reviews are gaining more space, especially in the governmental level, often being conducted to help a specific user to take a specific decision on a specific term, usually short.[7]

Watt *et al.*[19], in a comparative study, the methodological differences and the essential findings between rapid reviews and complete systematic reviews were analyzed, thinking about the point of view of clinical validity. The results indicated that there are obvious differences between the two approaches, especially with regard to the size of the scope and the methodology transparency used, but the conclusions are not

so different. The authors found that rapid reviews are relevant for clinical practice and for the development of new technologies and techniques and can reach appropriate conclusions. However, they pointed out that their methodology has limiters to account for more complex and deeper issues, they need to assess the ethical, security and economic implications.

Among the limitations of rapid reviews, the selected studies pointed out: limited research question, non-defined preparation time and methodology, lack of transparency as to the method used, restrictions on literature search, lack of clarity or limitation of the inclusion criteria, only one person conducting the study, simplification or even lack of bias risk analysis and quality assessment, lack of meta-analysis and recommendations generally limited to efficiency and effectiveness.

Hartling *et al.*[7], they reported some items that should be considered before implementing a rapid review program: the clarity purposes, the direct relationship with the end user, the limited scope, reliance on secondary sources, the ability to mobilize qualified personnel quickly and the transparency of the method, the latter mentioned in several other articles as critical to the review process.

Featherstone *et al.*[3], they emphasized the need to incorporate a discussion of the limitations in the development of rapid reviews and should be taken special care to eliminate the quality assessment of the included studies.

Although the value of the rapid review is recognized by all articles, none of them pointed out that it is a viable alternative to the systematic review and, therefore, they do not support its replacement. Many authors consider as a priority the development of research that address the validity of the rapid reviews in the face of the scarcity of studies of this type.

The discussion on the relevance and limitations of rapid reviews seem to have been depleted, since the studies are quite repetitive with respect to the results presented. In this sense, it is worth highlighting the most relevant results of the Seminar *Rapid review summit: Then, now and in the future*, held in early 2015 in Canada.[13] The event was attended by over 150 people, mainly including producers and users of rapid reviews. The event highlighted the growing importance of rapid reviews, their practices and gaps. The three key areas that emerged in the discussion were: how to conduct a rapid review and understand their validity and utility, and how to improve the access to them. Given the nature of rapid reviews, they often are not published, it is important to create opportunities to share this information.

Some experiments

The search identified experiences of some organizations with the production of rapid reviews, which help to understand some of the difficulties of standardizing this type of study. Rapid reviews are clearly geared to the needs of users and contexts of health systems and these are quite varied.

The *Canadian Agency for Drugs and Technologies in Health* (CADTH), since 2005, has a rapid response service that produces reports in response to urgent questions regarding drugs, devices, procedures, and diagnostic and screening tests. The rapid response products of CADTH vary from one reference list (produced in 5-10 days), Evidence brief of abstracts (15 days), Evidence brief with critical analysis (30 days) to a systematic review and meta-analysis (4-5 months). From 2005 to 2013, 2,362 rapid review reports were produced, of which 1,621 (31%) referred to drugs. The Evidence brief product

with critical analysis, which is produced in 30 days, following the pattern established for the systematic review, but does not involve a second independent researcher in the phases for study selection and data extraction, is not subjected to an external evaluator and do not perform the meta-analysis.[8]

Still in Canada, under the Knowledge to Action (KTA) research program, from November 2009 to March 2011, 11 evidence briefs for policy were produced. In this program the researchers have sought to improve the application of the methodological rigor of the systematic review, but without neglecting the ability to respond quickly (up to 5 weeks). The approach developed in parallel with the completion of the evidence brief includes eight stages: assessment of needs, development and improvement of the research question, preparation and approval of the proposal, systematic literature search, screening and selection of studies, narrative evidence brief of the included studies, preparation of the report, monitoring and dialogue with evidence brief users.[8]

The *Belgian Red Cross-Flanders*, generally uses rapid review in order to have an initial idea of the content, quantity and quality of available evidence; It is a document for internal use to prepare a systematic review project or clinical protocol.[1]

The *Joanna Briggs Institute* - JBI, University of Adelaide, Australia, has extensive experience in the production of rapid review related to clinical practice. The authors argue that while the systematic review is the ideal type of research to support the practice, often it does not respond to the needs of users in the services they provide care. For these users it is necessary to have a simple format for reading that can guide the practice. Until November 2014, the JBI had produced 2,458 evidence briefs for policy. Each month is produced about 60-70 new syntheses, which are updated annually. The methodology follows the following guidelines: preparation of the research question, structured literature search, critical selection and analysis of the studies, preparation of evidence brief, submission to peer review, incorporating the suggestions, making the material available on the website. The syntheses are carried out within a week, and most of them have focused on the effectiveness of interventions for specific clinical conditions.[11]

The World Health Organization (WHO) also started to use the rapid reviews to update the Essential Medicines List (EML). In 1977, the WHO published the first time the EML, which has been revised and updated every two years. Since 2002, the process has become more transparent and incorporated medical experts based on evidence. Although this change in the process is capable of providing more comprehensive evidence, it is understood that it is necessary to continue its improvement.[9]

Our country has made great advances in the area of evaluation of health technologies. Rebrats consists of 86 member institutions from 18 states. The collaboration between these members through six working groups, has expanded the possibility of training professionals from various subjects and make rapid reviews to the technical and scientific opinions, as well as systematic reviews, meta-analyzes and economic assessments. In line with the international concern, it was also developed herein several methodological guidelines related to ATS in order to increase the quality and comparability of studies.[17]. Regarding rapid reviews, methodological guidelines for the preparation of technical and scientific opinions recommend the following steps: formulation of the question of the opinion, team selection with knowledge on the subject, planning, draft a schedule of activities, detailing

the methodology, preparation of the summary of findings, interpretation and recommendation. The team should report the conflict of interest of its components, the research question should be structured, the search strategy should be as broad as possible and reproducible, studies exclusion criteria should be explicit and reported the reasons for exclusion, the studies included should be assessed for methodological quality using appropriate tools for each type of study, the quality of the evidence should be considered for each outcome with a view to prepare the recommendations.[10]

Conclusion and Recommendations

Despite the limited search strategy, this rapid review identified studies that brought extremely relevant information about the potential and limitations of this type of methodology.

It was observed that the results of selected studies were very similar, reflecting the depletion of some discussions as to the role and limitations of the rapid review.

Although rapid reviews do not reach the excellence standards for systematic reviews, with respect to the methodological rigor, they are very useful to support decision makers. It is important to seek improvement in the performance of rapid reviews and reports are transparent about the methods applied.

In Brazil, as in some countries, guidelines were developed to guide the realization of rapid review, with a view to achieving the best possible methodological quality on the limitations already described for this type of study.

The assessment of methodological quality of rapid reviews produced in the country, particularly the products offered by Rebrats could contribute to offer reference readings, closer to the recommended methodological quality.

References

1. De Buck E, Pauwels NS, Dieltjens T, Vandekerckhove P. Use of evidence-based practice in an aid organisation: a proposal to deal with the variety in terminology and methodology. Int J Evid Based Healthc. 2014;12(1):39-49.

2. Dias RISC, Barreto JOM, Vanni T, Candido AMSC, Moraes LH, Gomes MAR. Estratégias para estimular o uso de evidências científicas na tomada de decisão. Cad. Saúde Colet. 2015 [accessed on March 17, 2016]; 23 (3):316-322. Available at: http://www.scielo.br/pdf/cadsc/2015nahead/1414-462X-cadsc-1414-462X201500030005.pdf

3. Featherstone RM, Dryden DM, Foisy M, Guise JM, Mitchell MD, Paynter RA, et al. Advancing knowledge of rapid reviews: an analysis of results, conclusions and recommendations from published review articles examining rapid reviews. Syst Rev. 2015 [accessed on March 17, 2016]; 4:50. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4415284/pdf/13643_2015_Article_40.pdf

4. Ganann R, Ciliska D, Thomas H. Expediting systematic reviews: methods and implications of rapid reviews. Implement Sci. 2010 [accessed on March 17, 2016]; 5:56. [access available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2914085/pdf/1748-5908-5-56.pdf

5. Grant MJ, Booth A. A typology of reviews: an analysis of 14 review types and associated methodologies. Health Info Libr J. 2009 [accessed on March 17, 2016]; 26(2):91-108. Available at: http://onlinelibrary.wiley.com/doi/10.1111/j.1471-1842.2009.00848.x/epdf

6. Harker J, Kleijnen J. What is a rapid review? A methodological exploration of rapid reviews in Health Technology Assessments. Int J Evid Based Healthc. 2012; 10(4):397-410.

7. Hartling L, Guise JM, Kato E, Anderson J, Belinson S, Berliner E, et al. A taxonomy of rapid reviews links report types and methods to specific decision-making contexts. J Clin Epidemiol. 2015 [accessed on March 17, 2016]; 68(12):1451-1462.e3. Available at: http://www.jclinepi.com/article/S0895-4356%2815%2900372-8/pdf

8. Khangura S, Konnyu1 K, Cushman R, Grimshaw J, Moher D. Evidence summaries: the evolution of a rapid review approach. Syst Rev. 2012 [accessed on March 17, 2016]; 1:10. 2016] Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3351736/pdf/2046-4053-1-10.pdf

9. Li Y, Yu J, Du L, Sun X, Kwong JS, Wu B, et al. Exploration and practice of methods and processes of evidence-based rapid review on peer review of WHO EML application. J Evid Based Med. 2015; 8(4):222-228.

10. Ministério da Saúde. Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Departamento de Ciência e Tecnologia. Diretrizes metodológicas: elaboração de pareceres técnico-científicos. 4.ed. Brasília (DF);2014. 80 p.: il. [accessed on March 17, 2016]. Available at: http://rebrats.saude.gov.br/diretrizes-metodologicas

11. Munn Z, Lockwood C, Moola S. The Development and Use of Evidence Summaries for Point of Care Information Systems: A Streamlined Rapid Review Approach. Worldviews Evid Based Nurs. 2015;12(3):131-8.

12. Novaes HMD, Elias FTS. Uso da avaliação de tecnologias em saúde em processos de análise para incorporação de tecnologias no Sistema Único de Saúde no Ministério da Saúde. Cad. Saúde Pública. 2013 [accessed on March 17, 2016]; 29 (Sup): S7-S16. Available at: http://www.scielo.br/pdf/csp/v29s1/a02.pdf

13. Polisena J, Garritty C, Kamel C, Stevens A, Abou-Setta AM. Rapid review programs to support health care and policy decision making: a descriptive analysis of processes and methods. Syst Rev. 2015 [accessed on March 17, 2016]; 4:26. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4407715/pdf/13643_2015_Article_22.pdf

14. Shea BJ, Grimshaw JM, Wells GA, Boers M, Andersson N, Hamel C, et al. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. BMC Med Res Methodol. 2007 [accessed on December 18, 2015]; 7:10. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1810543/pdf/1471-2288-7-10.pdf

15. Silva MT. Avaliação de tecnologias em saúde: diretrizes para elaboração de pareceres técnico-científicos. BIS. Boletim do Instituto de Saúde. 2013 [accessed on March 17, 2016]; 14(2):159-164. Available at: http://periodicos.ses.sp.bvs.br/pdf/bis/v14n2/v14n2a05.pdf

16. Tricco AC, Antony J, Zarin W, Strifler L, Ghassemi M, Ivory J, et al. A scoping review of rapid review methods. BMC Med. 2015 [accessed on March 17, 2016]; 13(1):224. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4574114/pdf/ 12916_2015_Article_465.pdf

17. Vanni T, Stein AT, Souza KM, Freitas MG, Patterson I, Assis EC, et al. Inteligência avaliativa em rede: construindo consenso em Avaliação de Tecnologias em Saúde. Rev Eletron de Comun Inf Inov Saúde. 2015 [accessed on March 17, 2016]; 9(4). Available at: http://www.reciis.icict.fiocruz.br/index.php/reciis/article/view/1026/pdf_1026

18. Watt A, Cameron A, Sturm L, Lathlean T, Babidge W, Blamey S, et al. Rapid reviews versus full systematic reviews: An inventory of current methods and practice in health technology assessment. Int J Technol Assess Health Care. 2008; 24(2):133-139.

19. Watt A, Cameron A, Sturm L, Lathlean T, Babidge W, Blamey S, et al. Rapid versus full systematic reviews: validity in clinical practice? ANZ J Surg. 2008; 78(11):1037-40.

The cost-minimization analysis of the TOP Maternal and infant radiant warmer for temperature maintenance of healthy newborns in the first hour of life

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Abstract

Introduction: Systematic reviews and a clinical study conducted at the Maternity Hospital Leonor Mendes de Barros (HMLMB) found that healthy newborns exposed to infant radiant warmer (IRW) or skin to skin contact favored by TOP Maternal (TOP) in the first hour of life, have an equivalent thermoregulation. **Objective:** To analyze the cost of the infant radiant warmer and TOP Maternal to serve the healthy newborns in the first hour of life in order to maintain their temperature. **Method:** The cost-minimization analysis on assistance to newborns with use of TOP Maternal and infant radiant warmer. **Results:** It was identified that the cost of care on average to newborns in IRW is BRL 3.39, while the TOP is BRL 0.75. **Conclusion:** It can be identified by studying the amount spent on the TOP is more than four times lower when compared to IRW. Both the infant radiant warmer, as the TOP Maternal keeps the recommended temperature for thermoregulation, but the use of TOP can provide other benefits such as: calm the baby, breastfeeding success and mother-child bond already described in literature. The infant radiant warmer is still recommended equipment for newborns with limited temperature adaptation to the environment, such as premature and low-birth-weight infants.

Keywords: newborns, body temperature regulation, cost analysis in health.

Introduction

Nowadays, even in developed countries, problems with newborn (NB) thermoregulation still represent a point of difficult care.[12]

During pregnancy, maternal mechanisms maintain the intrauterine temperature at around 37.5°C, providing the fetus with a suitable thermal environment. After birth, NBs need to adapt to the relatively cold environment. Temperature maintenance occurs through metabolic production of heat, once they are unable to generate a proper response even with the physiological mechanism of shivers.[8]

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Thermoregulation is a physiologic function closely related to the transition and survival of NBs. They have the ability to control the body temperature, but in extreme temperature conditions (too low or too high), there is a physical difficulty to maintain homeostasis. Thus, care related to core body temperature maintenance and control of NBs is essential for their survival, once they cool and overheat with ease, following the changes in the thermal environment.[5]

NBs lose heat in four ways: evaporation (at birth); conduction (direct contact with cold surfaces); radiation (loss to distant cold surfaces); and convection (by cold air stream). Other predisposing factors in the baby may also influence heat loss: greater weight-related body surface, larger head compared to the body, thin skin and, in the case of premature NBs, because they have less brown fat that has a primary function in the body temperature balance as it is more vascularized and rich in sympathetic innervation.[6]

Conventionally, the management of care right after birth delivered to the NB has been performed in the infant radiant warmer (IRW) unit that has the same principle of the incubator and has been widely used to promote thermal support for babies in the delivery room, in order to promote thermal stability during routine care and hygiene procedures, especially for NBs with health problems, who should remain for a longer period in cold environments. The equipment has in its basic structure a radiating heat system created to be used in NB in the first moments of life or during prolonged care, with easy visualization and access to the baby without interruption of heating.[3]

Among the recommended care to favor NB thermoregulation after birth, besides the room temperature control, recent studies analyze the evidence of the benefits of early skin-to-skin contact (SSC) between mother and baby, such as: core body temperature maintenance, increased levels of capillary glycemia, decreased pain, reduced crying, promotion of comfort and sleep, as well as promoting breastfeeding and affective bonding.[7]

Premature NBs, who have less brown fat, also benefit from SSC. Studies have shown that the baby's contact with the mother's body creates a beneficial effect on maintaining his body temperature. The intervention called the Kangaroo Mother Method or skin-to-skin contact was pioneered and deployed by Edgar Rey Sanabria and Hector Martinez in 1979 at the Instituto Materno Infantil of Bogotá, Colombia. The name was given because of the way mothers carried their babies after birth, similar to marsupials.[11]

In Brazil, the first services that applied the SSC were Hospital Guilherme Álvaro, in Santos (SP) in 1992, the Instituto Materno-Infantil de Pernambuco (IMIP) in 1993, and in the HMLMB researchers studied the viability from 1993 to 1997, in the scope of the kangaroo method for the care of premature newborns.[10,11] After implantation in HMLMB, the method has been improved to guarantee SSC immediately after birth for term newborns.

With the objective of meeting the concern of the HMLMB team in the safety of the baby next to the body of the mother avoiding slip, in preserving the embarrassment of the woman in the moment of the prepartum and delivery covering the breasts, besides favoring the skin-to-skin contact right after the birth, the TOP Maternal (TOP) was designed. This device consists of a circular cotton knit, 90 cm wide and 90 cm high, placed before delivery around the mother's chest, where the NB born in good condition will be placed.[1,2]

The review by Cochrane[7], which analyzed 34 studies on early SSC in babies, in which one of the weighted outcomes was body temperature change in SSC compared to standard of care (assisted

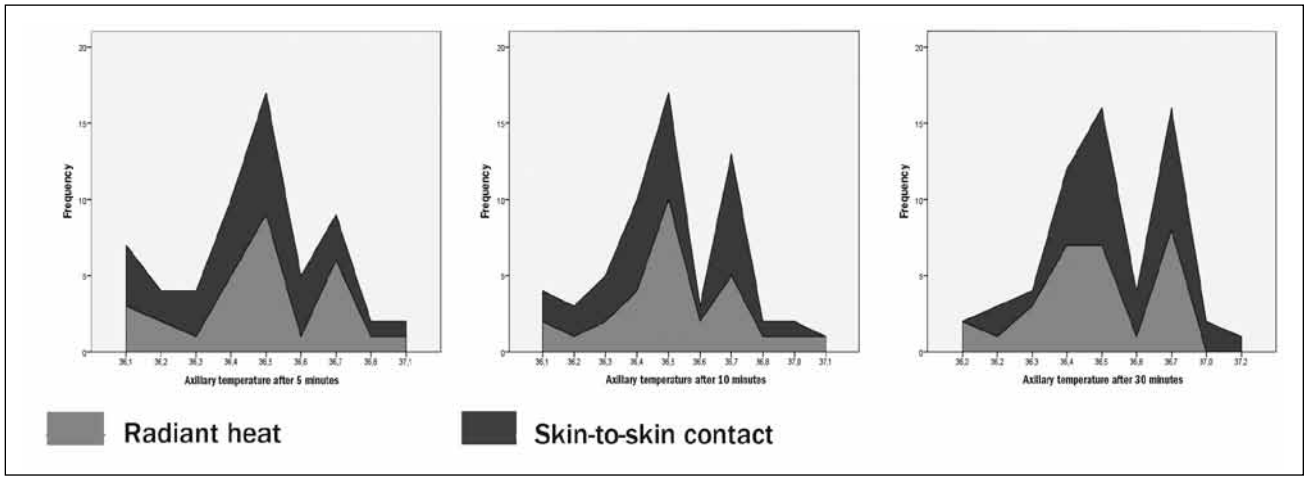
heat), revealed that there were no significant changes in maintenance of body temperature for either of the two methods employed, only a few more benefits were identified in SSC, one of them being early breastfeeding. Among the studies analyzed, when the evaluation of temperature was verified by more advanced technology, such as infrared thermography, the same results were obtained in babies in skin-to-skin care and in assisted heat. At HMLMB, a similar clinical study was performed, with axillary temperature verification of 60 healthy NBs in the first 5, 10 and 30 minutes of life, and similar results were obtained. No significant statistical difference was identified for thermoregulation in babies placed in IRW or In TOP, as we can see in the area chart below.

Studies as observed in Cochrane's analyses[7] and at HMLMB also present identical thermoregulation outcomes in healthy babies for the two technologies, but there are still no studies determining which of them may be a better option under the logic of monetary costs.

Cost represents the monetary value of inputs such as capital, labor, materials, devices, drugs, among others, which are used in the production or distribution of goods and services.[4,9]

Aiming to investigate economic aspects related to the two technological strategies of care, this study of cost-minimization of the care of the RN placed in the IRW and under TOP in contact with its mother's body was developed.

Chart. Temperature of newborns subjected to radiant heat and TOP Maternal device.



Source: Albuquerque R S, Mariani Neto, C, Bersusa AAS Dias, V, Silva MI. Temperature of newborns subjected to radiant heat and TOP Maternal device. ID is RLAE-2014-0305. (in press).

Method

We opted for the cost-minimization study because we understand that we were at the forefront of two technologies that had equivalent results and that we wanted to identify the strategy with the lowest cost.

In order to construct the data collection instrument, information was collected from 39 randomly-selected medical records of babies born between February 2013 and January 2016. The following data were extracted: gestational age equal to or greater than 37 weeks; Apgar of

1 and 5 minutes of life equal to or greater than 7; control of axillary temperatures in the first, fifth and thirtieth minutes of life and children of mothers over the age of 18 years. This collection allowed the preparation of a first list of items to verify the costs related to the two technologies. The collection of this information was only initiated after the approval of the Ethics and Research Committee of Maternity Hospital Leonor Mendes de Barros, under number 1097515.

This retrospective analysis of medical records allowed the prototype of the instrument to be improved by direct procedure observation, complemented by all the items, materials and human resources required for each technology studied, as well as the time spent.

Among the items, the inputs and equipment were listed, as well as the professionals involved to use the technologies studied. For the calculation, the data made available by the purchasing sector of the place where the data was collected was used, and the acquisition of the data follows the legislation of the Government of the State of São Paulo carried out through official electronic trading sessions. From the values made available, average costs were calculated for each of the equipment used in the IRW procedure.

The reference to the time that each technology is used in an effective and useful way was one year. This calculation had as a subsidy the evaluation of the TOP laundry sector, until it appears ripping and rupture of the fabric, and of the same time for the IRW, in which the technicians of the equipment maintenance sector of the institution observe and record in their reports, and after that time there is always need to repair or deactivate the equipment. Only the following items were considered: fuse, power cable and resistance, which according to the evaluation of the team are changed at least twice in the first year of use.

The historical number of births per month (400), as well as the number of IRWs available (8) for care in the delivery room were used as a basis for calculating the expenditure of the use of these technologies for each delivery, which allowed us to know that each IRW services 1.6 NB/day. In relation to TOP technology, the Voluntárias da Casa Maternal (VOMAT) group, former name of the Maternity Hospital Leonor Mendes de Barros, manufactures 1600 TOP per year, which are used 36 times after a process of sanitation between one use and another.

The production of TOP in HMLMB is exempt of actual costs related to the fabric, the sewing lines and the sewing service, only being paid the printing of the logo of the institution in each of them. Thus, to allow a comparison between the technologies, a survey of the internet price of these items was used, considering the highest and lowest price, and we worked with the average cost.

The TOP sanitation is carried out in an external laundry whose price is paid per kilo of laundry washed and dried. To obtain the calculation of the cost of a TOP, 20 pieces were weighed and on average we obtained a weight of 0.086kg per device.

In relation to the IRW, the costs of operationalization were listed: cleaning, maintenance services and other materials indispensable to the operation of the equipment throughout its useful life. The calculation of electric consumption was considered from the price of kilowatts/hour, the consumption of the device being approximately 1 KWh per 1 hour of use, and the average time of use by each baby, average of 40 minutes. The cleaning of the warmer was timed, resulting in an average of 15 minutes of use for this activity, which was summed to the cost of the disinfectant solution (15mL/warmer).

Results and Discussion

The majority (56.0%) of the NBs who participated in the study were born with a normal delivery, with a prevalence of 54% in the Obstetric Center, and 59% and 38% were exposed to IRW and SSC, respectively. The majority (15) of the babies maintained axillary temperature between 36.5°C and 37.4°C. Gestational age varied from 38 to 39 weeks in 69% of the cases.

The IRW equipment has an average of one year of useful life without the need for maintenance, according to the HMLMB equipment maintenance and monitoring records. In the first year, it was verified in the reports that there were on average two replacements of fuse, power cable and resistance per year, including in the first year of use. The crib is used on average 1.6 times a day, which may require up to two daily cleanings.

It can be identified, according to the data in Table 1, that the amount spent to use the IRW generates a cost of BRL 3.43. If you consider that the same equipment is used 1.6 times in the same day, plus a hygienization process and the electric cost, the total value is BRL 5.53.

It is important to note that, in addition to the items presented for the IRW technology, there are complex variables that were not presented in this study because they occur sporadically, such as the use of generator for possible lack of electric power supply or the lack of the apparatus in the room, when it is sent to maintenance for replacement of resistance, wire or fuse. We also disregarded the staff training for sanitation that is always performed when there is a change of manufacturers or procedures.

The other technology evaluated in this study is the TOP device that is made at the institution Leonor Mendes de Barros by the volunteer service of the hospital, having as only external expenses the laundry service for hygiene. Cotton fabric with elastane to facilitate the baby's approach to the mother's body is required to make the TOP. In the market, this fabric is sold at an average price of BRL 9.00 per meter, measuring 90 cm x 90 cm. Three meters of the fabric are enough to make 12 TOPs, at a price of 2.25 each. The line for sewing a TOP costs 0.008 and the stamp with the institution logo and the sewing service will be 2.75. The total price of a TOP is 5.008.

Table 1 - Equipment and process used for the use of IRW in the maintenance of the newborn temperature in the first hour of life, according to costs. São Paulo, 2015.

Technology Infant Radiant Warmer	Costs (BRL) Highest	 Lowest	 Avg.	Monthly cost (BRL)	Cost per delivery (BRL)
Complete equipment	7,268.00	4,500.00	5,884.00	490.33	1.22
Fuse	0.60	0.10	0.35	0.053	0.00013
Power cable	16.90	12.00	14.45	2.40	0.006
Resistance	350.00	120.00	235.00	39.16	0.09
Professional (sanitation)	13.59/15 minutes + disinfectant solution			815.40	2.04
Electric consumption	0.54/40 minutes of use			32.40	0.081
Total					3.43

Table 2. Inputs used for the preparation and maintenance of the TOP Maternal device to maintain the healthy NB temperature in the first hour of life, according to costs. São Paulo, 2016.

Technology Top Maternal	Cost (BRL)	Monthly cost (BRL)	Cost per delivery (BRL)
TOP Confection	5.008X1600 8,012.80 (annual cost)	667.73	1.66/TOP 0.55/ 3 TOP month
TOP Sanitation Washing and drying laundry service for TOP weighting 0.086kg	0.20	80.00	0.20
Total			0.75

Table 2 shows the cost relative to the manufacturing and hygiene for reuse of the device. The TOP Maternal device technology is simpler as it basically involves two procedures to be ready for use, confection and sanitation.

The time provided by the delivery care team (doctors, obstetricians and obstetric nurses) in the use of the two technologies is similar, not interfering in the costs of their application.

Conclusion

Studies show that both IRW and TOP technologies have similar performance with respect to maintaining body temperature for healthy babies within the first hour after delivery.[4,6]

The cost-minimization study allowed us to conclude that the amount spent with the TOP is more than four times lower than the IRW and that this difference is mainly due to the fact that this device is used up to 3 times a month, with expenses only for its hygiene. The IRW requires more maintenance services, has a higher acquisition value, besides the consumption of electric energy and hygiene, which increase its final price when comparing the two technologies.

When comparing the cost of the two technologies during one year, we can identify that for the babies attended by the IRW the amount was BRL 26,544.00, while for the TOP it was BRL 3,600.00. In the case of the HMLMB, this amount dropped to BRL 2,400.00, since the cost of the confection is donated by VOMAT.

Thus, the results lead to the understanding that in order to provide care to the NB with good birth conditions and without the need for special care in the first hour of life, both TOP and IRW can be used; however, regarding the costs, the TOP is comparatively four times cheaper than IRW, summed with other well-established and prominent benefits in the literature, such as early breastfeeding and increased mother-child bonding. Thus, we understand that the use of the IRW can be directed to NBs with special needs detected by the team responsible for their care immediately after the delivery, becoming, in this scenario, indispensable to favor the prognosis of the NB, as in cases of preterm babies or babies born with disabilities.

References

1. Albuquerque RS, Mariani Neto C, Bersusa AAS, Dias V, Silva MI. Temperatura dos recém-nascidos submetidos ao calor radiante e ao dispositivo Top Maternal. ID is RLAE-2014-0305. (no prelo).

2. Albuquerque RS, Mariani Neto C, Natal DAM, Kuzuhara JSW, Mattar MJG. Percepção de mulheres atendidas no Hospital Maternidade Leonor Mendes de Barros e equipe de trabalho sobre o uso do TOP MATERNAL: um olhar para o conforto e para a amamentação. [Apresentação de pôster no VII Congresso Brasileiro de Enfermagem Obstétrica e II Congresso Internacional de Enfermagem Obstétrica e Neonatal 2011, Out 30 - Nov 1, Florianópolis, Santa Catarina]. (Relatora).

3. FANEM. Manual do usuário. Unidade de aquecimento de parede multisystem 2051. São Paulo;2003. [accessed on June 22, 2015]. Available at: http://www4.anvisa.gov.br/base/visadoc/REL/REL[6086-1-2].PDF

4. Ministério da Saúde. Estudos de Avaliação Econômica de Tecnologias em Saúde. Diretrizes Metodológicas. Brasília(DF); 2009. [accessed on march 17, 2016]. Available at: http://bvsms.saude.gov.br/bvs/publicacoes/avaliacao_economica_tecnologias_saude_2009.pdf

5. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Ações Programáticas e Estratégicas. Atenção à saúde do recém-nascido: guia para os profissionais de saúde. Brasília (DF): 2011. 4 v.: il. (Série A. Normas e Manuais Técnicos). [accessed on May 9, 2016]. Available at: http://bvsms.saude.gov.br/bvs/publicacoes/atencao_recem_nascido_%20guia_profissionais_saude_v4.pdf

6. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. Atenção à saúde do recém-nascido: guia para os profissionais de saúde. 2.ed. Brasília (DF); 2012. 4 v.: il. [accessed on May 9, 2016]. Available at: http://bvsms.saude.gov.br/bvs/publicacoes/atencao_saude_recem_nascido_profissionais_v1.pdf

7. Moore ER, Anderson GC, Bergman N, DowswellT. Early skin-to-skin contact for mothers and their healthy newborn infants. Cochrane Database of Systematic Reviews 2012, Issue 5. Art. No.: CD003519. DOI:10.1002/14651858.CD003519.pub3. [accessed on May 9, 2016]. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3979156/pdf/emss-57256.pdf

8. Rolin KMC, Araújo AFPC, Campos NMM, Lopes SMB, Gurgel EPP, Campos ACS. Cuidado quanto á termorregulação do recém-nascido prematuro: o olhar da enfermeira. Rer Rene. Fortaleza. 2010 [accessed on May 9, 2016];11(2):44-52. Available at: http://www.revistarene.ufc.br/vol11n2_pdf/a05v11n2.pdf

9. Santos ME, Leal EA, Silva DA. Produção científica em gestão de custos em hospitais: uma análise nos principais eventos acadêmicos na área contábil. Rev Admin Hospitalar. 2014 [accessed on May 9, 2016];11(1):42-57. Available at: http://www.abeneventos.com.br/10sinaden/anais/files/0091.pdf

10. Toma TS. Da intuição às políticas públicas: a jornada para incorporação do Método Canguru no cuidado ao recém-nascido de baixo peso. BIS, Bol. Inst. Saúde. 2012[accessed on May 3, 2016];13(3):231-8. Available at: http://periodicos.ses.sp.bvs.br/pdf/bis/v13n3/v13n3a05.pdf

11. Venâncio SI. Almeida H. Método Mãe Canguru: aplicação no Brasil, evidências científicas e impacto sobre o aleitamento materno. Jornal de Pediatria; 2004 [accessed on May 3, 2016];80(5 Supl):S173-S180. Available at: http://www.scielo.br/pdf/jped/v80n5s0/v80n5s0a09

12. Ventura CMU, Alves JGB, Meneses JA. Eventos adversos em unidade de terapia intensiva neonatal. Rev Bras Enf. 2012[accessed on May 3, 2016];65(1):49-55. Available at: http://www.scielo.br/pdf/reben/v65n1/07.pdf

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