Who contextualizes clinical epidemiological evidence? A political analysis of the problem of evidence-based medicine in the layered Dutch healthcare system

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Abstract

We critically examine the discussion on the role of evidence-based medicine (EBM) in healthcare governance. We take the institutionally layered Dutch healthcare system as our case study. Here, different actors are involved in the regulation, provision and financing of healthcare services. Over the last decades, these actors have related to EBM to inform their actor specific roles. At the same time, EBM has increasingly been problematized. To better understand this problematization, we organized focus groups and interviews. We noticed that particularly EBM's reductionist epistemology and its uncritical use by 'professional others' are considered problematic. However, our analysis also reveals that something else seems to be at stake. In fact, all the actors involved underwrite EBM's reductionist epistemology and emphasize that evidence should be contextualized. They however do so in different ways and with different contexts in mind. Moreover, the ways in which some actors contextualize evidence has consequences for the ways in which others can do the same. We therefore emphasize that behind EBM's scientific problematization lurks a political issue. A dispute over *who* should contextualize evidence *how,* in a layered healthcare system with interdependent actors that cater to both individual patients and the public. We urge public administration scholars and policymakers to open-up the political confrontation between healthcare actors and their sometimes irreconcilable, yet evidence-informed, perspectives.

Keywords: evidence-based medicine; institutional layering; politics; healthcare decision-making; qualitative research.

Introduction

In many countries, 'evidence-based medicine' (EBM) has become an important principle in healthcare governance (Harbour and Miller 2001; Berwick 2016). It emerged in the field of clinical epidemiology and gained prominence amongst professionals in the 1990's (Sackett et al. 1996). EBM aimed to reduce unexplained and therefore undesired variation in the provision of care. It advocated treatment based on the best clinical epidemiological evidence available (Berwick 2016) and criticized healthcare decision-making based on professional authority. It encouraged more standardized forms of decision-making, based on statistical evidence about the effectiveness of interventions. EBM furthered randomized controlled trials (RCT's) as the gold standard of evidence (Timmermans and Berg 2003).

The standardizing qualities of EBM are increasingly called into question (Greenhalgh et al. 2014). In the academic literature, EBM is criticized along two lines of argumentation. In the first, authors criticize its epistemological reductionist approach and complex methodology; emphasizing that EBM draws predominantly on statistical data derived from selective populations, analyzed in ways that only methodological experts understand (Berlin and Golub 2014). In the second, authors criticize its use in – and beyond – the counselling room. Their critique is that professionals and 'professional others' (such as healthcare managers, policymakers, health insurers and regulators) base their treatment plans, policies or monitoring instruments on statistical data, without taking into account the situation of individual patients (Greenhalgh et al. 2014; Hargraves et al. 2016).

The questioning of EBM's scientific principles and uncritical use have become laden affairs in hospitals, knowledge centers, insurance companies and government offices. Actors defending evidence-based healthcare decision-making are classified as orthodox positivists (Mol and Evers 2017 [responses]). Actors questioning the dominant role of statistical evidence in healthcare decision-making are accused of quackery in turn (Mol and Evers 2017). At conferences, the vices and virtues of EBM are celebrated and disqualified. Presenters are lauded or hooted (personal observations 2017). The EBM discussion has become a site of pluralism, conflict and strive (Mouffe 2005).

We argue that a political analysis of the discussion generates insights that cannot be captured by biomedical or professional approaches. Informed by Mouffe (2006) and Bacchi (2012), we conceptualize contemporary healthcare systems as highly political. On the one hand, such systems consist of different regulatory frameworks (from professional self-regulation to regulated markets; cf. Van de Bovenkamp et al. 2014; Felder et al. 2018). On the other hand, such systems harbor a plurality of actors that shape and legitimize their

actors-specific roles by relating to different regulatory frameworks as well as scientific truth claims and counterclaims (Deacon 2000; Halffman 2003; Flynn 2005; Bacchi 2012).

Informed by the above, we examine a) how EBM informs the identities, roles and positions of different actors in layered healthcare systems; and b) the perceived problems that emerge from such differences when it comes to healthcare decision-making. We do so by answering the following research question:

> *How and by whom has the role of EBM in healthcare decision-making been problematized and why is that the case?*

The Netherlands has become an exemplary case to reveal the complex relations in which EBM has become constituted as a problem that needs to be solved. Here, healthcare governance, traditionally controlled by professional authority, has been supplemented with a plethora of market and state-based regulatory arrangements (Van de Bovenkamp et al. 2014). In doing so, the Dutch case resonates well with the layered healthcare systems in many western countries (Tovey et al. 2014; Berwick 2016).

Our political analysis reveals that behind the epistemologically and professionally framed discussion unfolds a dispute over who is able – and should be allowed – to interpret and contextualize clinical epidemiological evidence in decision-making that does right to individual patients and upholds the quality, safety and affordability of a collective healthcare system. The future of EBM should therefore not just be an epidemiological or professional project. Instead, we urge policymakers and scholars of public administration to take the EBM discussion seriously and to start focusing on the layered healthcare systems in which evidence is contextualized and evidence-based decisions are being made.

EBM in the layered Dutch healthcare system

As in many western countries, the dominant position of Dutch healthcare professionals has been called into question; particularly so since the 1970's (Freidson 1973). EBM played an important role in this process as it scrutinized healthcare decision-making based on professional authority and stimulated healthcare decision-making based on the best evidence available (Sackett et al. 1996). The early advocates of EBM however still intended for evidence-based decision-making to be a professional affair; describing it as a process of critical appraisal (Greenhalgh et al. 2014). Critical appraisal here referred to the use of: (a) evidence, (b) clinical experience and (c) patients' needs and wishes, during shared decision-making with patients in the counselling room (cf. Sackett et al. 1996).

However, Dutch healthcare governance was changing beyond the convinces of professional self-organization and regulation. As new governance principles such as 'accountability', 'efficiency' and 'affordability' became important frames of reference (Berwick 2016). So too were new regulatory arrangements introduced on top of professional self-regulation. A key example in the Netherlands is the introduction of the Health Insurance Act in 2006 (Helderman et al. 2005). This act aimed to reduce costs and raise the quality of healthcare services through the introduction of market mechanisms. It decreed that professionals should start competing with one another on the quality and price of healthcare services. At the same time, it strengthened the position of health insurers. They should start negotiating with professionals about the price, volume and quality of care provided.

Meanwhile, the Dutch healthcare system was not entirely left to the whims of the market. In addition, several semi-governmental organizations received parts to play in safeguarding access to care and minimum quality (Van de Bovenkamp et al. 2014). The Dutch Healthcare Institute was charged, amongst other things, with stimulating and overseeing the development of quality instruments and with advising the Minister of Health on which care should be included in and excluded from the 'basic healthcare agreement'. This agreement recognizes the minimum care to be covered by health insurers; thereby making such care accessible for (obligatory insured) Dutch citizens. Moreover, the Dutch Healthcare Inspectorate continued to inspect on the quality and safety of care provided.

By introducing market mechanisms beside professional self-regulation and state-based regulation, a layered healthcare system emerged (Van de Bovenkamp et al. 2014). An effect of such layering is that healthcare decision-making has become fragmented (Felder et al. 2018). It prompted a proliferation of 'professional others' involved in healthcare decision-making (Lascoumes and Le Galès 2007). Examples are health insurers, policymakers, knowledge institutes and inspectorates. Each of these actors has adopted EBM in the ways in which they shape their roles and legitimize role-specific decisions (Deacon 2000; Flynn 2005; Bacchi 2012). But, as we will also show in of our empirical section, such wide uptake of EBM has not brought coherence in the governance of care (cf. figure 4).

Methodology

Our inquiry stems from a broader discussion in the Netherlands on the vices and virtues of evidence-based decision-making. In fact, the first and third author participated as researchers in a Dutch advisory board (de Raad voor de Volksgezondheid en Samenleving [RVenS]) that sought to better understand the implications of this discussion for Dutch healthcare governance (RVenS 2017). The data gathered for the policy advice is reused in this paper.

Although the identified problems presented here generally reflect the policy advice, we have placed more emphasis on a political analysis of such problematization (Bacchi 2012).

To gain insight into the Dutch discussion, the RVenS organized two focus groups in November and December 2016. The first included a variety of experts (N=7), including medical sociologists, a medical history scholar and a medical philosopher, studying and publishing on EBM. The second included healthcare practitioners from the field (N=5), including a medical specialist, a general practitioner, a geriatric practitioner, a medical researcher and a junior medical specialist. To gain complementary insight, the RVenS organized additional interviews in the spring of 2017. Interviewees were: a psychiatrist (N=1); gynecologists (N=2); midwife (N=1); and respondents from the Dutch Healthcare Inspectorate (N=2); a knowledge institute (N=5); and a healthcare insurer (N=2).

The aim was not to work towards a representative sample of an actor group specifically (e.g. medical specialists), nor of the Dutch healthcare system more generally (e.g. professionals, health insurers and policy makers). Instead, the aim was to gain insight into the different ways in which EBM was problematized and/or defended. Respondents were thus identified through their engagement in the discussion.

Focus groups and interviews were semi-structured around three main questions. (I) How does EBM contribute to the provision of healthcare? (II) Which problems or challenges do respondents encounter? And (III) which directions for improvement or change do respondents identify? Both focus groups and all but one of the interviews were audiotaped and transcribed verbatim. Where audiotaping was not possible, fieldnotes were made and further elaborated afterwards. The individual contributions of respondents were anonymized.

For this paper, we revisited the transcripts and coded descriptions of what EBM is (and what not), what its problems are (and what not), how it should be used by who (and who not) and why that is the case (legitimations). We member-checked our analysis on two separate occasions in the spring of 2017. We first presented our preliminary interpretation on a conference on evidence-based guideline development. We furthermore presented our analysis during the public release of the policy advice (RVenS 2017). Comments and suggestions were used to fine-tune our analysis.

The problem of EBM in the Dutch governance of care

This empirical section is divided into three parts. First, we present how EBM informs the actions of different actors in Dutch healthcare governance. Thereafter, we present how

and by whom EBM has become problematized. Lastly, we consider how these problematizations mirror decision-making dynamics between actors in the layered Dutch healthcare system.

Part 1: The use of EBM by different actors

Each of the actors introduced in figure 4 uses EBM in and on their own terms. In the coming four subsections, we describe how.

Evidence in the counselling room

The professionals we interviewed described themselves as interpreters who make context dependent decisions about individual treatment plans. Such treatment plans are informed by clinical epidemiological evidence, but they cannot be reduced to such evidence. In fact, the interviewed professionals stressed that, as professionals, they should be able to translate evidence to the health problem of individual patients. In the words of a professional:

> *'The whole idea is that you explore the problem of the patient in the context of the patient, then look into what the [evidence informed] guidelines say about what we do – on average – with such a problem and after that make a decision together with the patient.'* (geriatric professional, focus group 2016)

We observed that the way professionals describe their own practice strongly resembles Greenhalgh and colleagues' (2014) celebration of an original form of EBM (Sackett et al. 1996). One thing is different though. There where Sackett and colleagues' (1996) reading of EBM emphasized the critical appraisal of the best evidence available – with *the best* referring to RCT's and meta-analysis thereof – interviewed professionals mostly referred to evidence-informed professional guidelines. In the next paragraph, we explain why this is an important difference to emphasize.

Evidence in guideline development

Even though professionals frequently refer to professional guidelines when talking about evidence, such guidelines are more than a representation of clinical epidemiological evidence. In fact, not only in the counselling room, but also in the development of guidelines, such evidence is weighted next to clinical experience and patients' needs and wishes.

> *'Guidelines are supported by evidence, but they also include a translation of the international evidence to the Dutch context, the extent of the problem here, its specific organization of care, the patient perspective. Only after that do we present considerations and recommendations.'* (gynecologist, interview 2017)

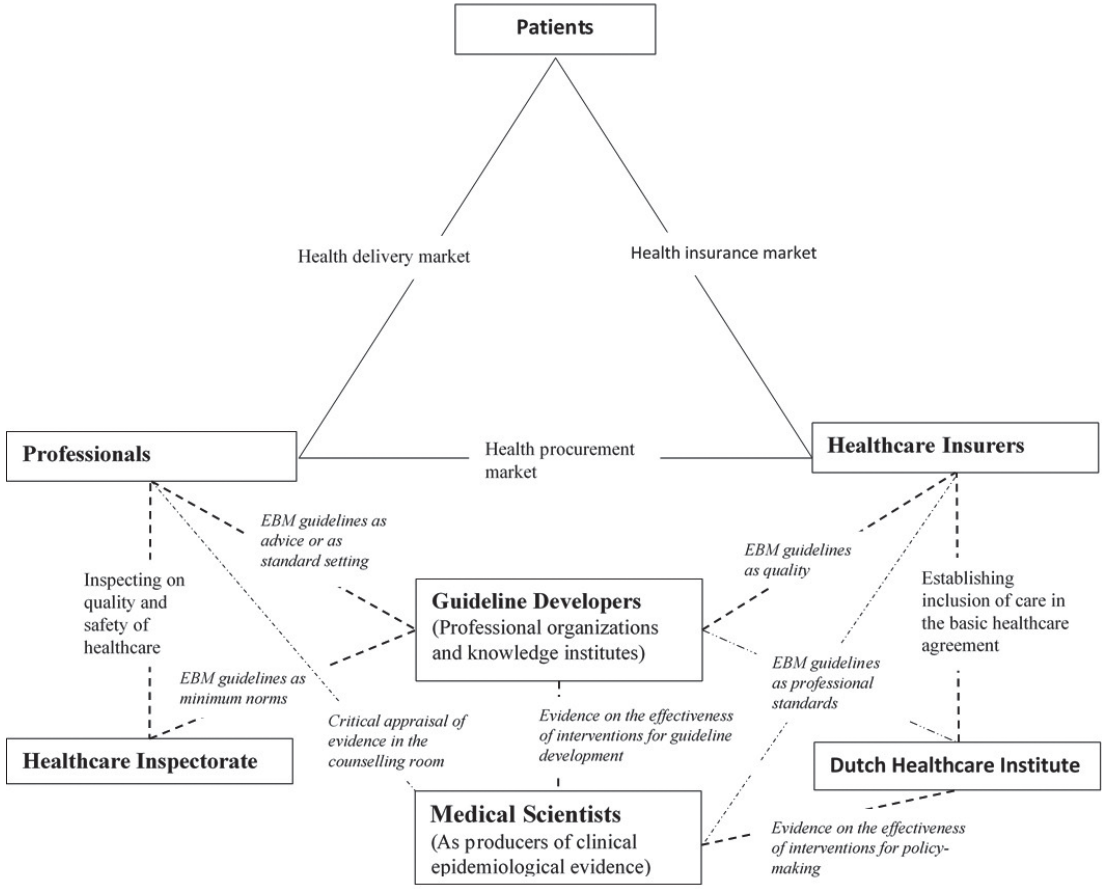

Figure 4: *A representation of the layered Dutch healthcare system and the role of clinical epidemiological evidence therein*

Although the relative weight of the patient perspective remains an important point for discussion (Van de Bovenkamp and Zuiderent-Jerak 2015), the abovementioned quote illustrates how professional guidelines claim to be more than a sum of the epidemiological evidence on a topic. In fact, what emerges is a situation in which evidence is contextualized on two levels within a professional context: in the development of guidelines and in the counselling room.

Evidence in regulating quality and safety

Next to professionals, other actors use professional guidelines to inform their actor specific actions. For instance, the Dutch Healthcare Inspectorate uses the developed guidelines to: (a) prospectively influence healthcare processes; and (b) retrospectively assess the safety and quality of care provided (Inspector, interview 2017).

In the inspectorate's line of reasoning, the content of care is still in the hands of professional organizations through their key role in guideline development. The inspectorate in turn supervises whether professionals live up to the uniform agreements that professionals set for themselves in these guidelines. In the words of an inspector (interview 2017):

> '*There is no evidence that driving on the right side of the road is safer than driving on the left side of the road. Nevertheless, there is enough evidence that supports the idea that a decision needs to be made to either drive on the left or on the right side of the road.*'

In this line of thought, the inspectorate acknowledges the weighing of evidence on the level of guideline development. At the same time and in contrast to the first subsection, the inspectorate's approach however compromises the critical appraisal of such guidelines in the counselling room. To be specific here, the inspectorate supports the professional's claim that clinical epidemiological evidence needs to be contextualized. The inspectorate however also emphasizes that such contextualization should be done uniformly and on an aggregate level; that of the professional organization.

Evidence in policymaking

Also the Dutch Healthcare Institute uses clinical epidemiological evidence and professional guidelines to inform their actions. They do so to provide policy advice to the Ministry of Health about which treatments should be (preliminary) included in the 'basic healthcare agreement'. The basic healthcare agreement dictates which care is to be considered standard insured care and needs to be covered by Dutch health insurers. The Institute's objective is to include care that is proven effective and affordable in order to protect a healthcare system that is collectively financed (Dutch Healthcare Institute 2015).

The Institute developed a systematic assessment framework to support them in identifying what can be considered care that is proven effective and affordable (Dutch Healthcare Institute 2015). Relative effectiveness is the key principle here. This means a treatment needs to be an improvement of the already existing treatments, this improvement needs to be significant, and there needs to be confidence that the improvement exerts itself in professional practice (Dutch Healthcare Institute 2015). It is here that professional and patient perspectives are taken into account, specifically there were evidence is inconsistent and/or where there is broad consensus between professionals and patient organizations about value of treatment (Dutch Healthcare Institute 2015).

In following these steps systematically, the Dutch Healthcare Institute explicitly relates their actions to the principles of EBM. In their own words:

> '*We use the principles of EBM in our assessment. Although it was developed to aid professionals to make clinical decisions for individual patients, its principles have found a much broader application. It is also used in the development of professional guidelines and policies regarding public health. In these cases, it is no longer about decision-making in relation to individual patients, but rather about advice and decisions on the level of the population.*' (Dutch Healthcare Institute 2015: 6)

The Dutch Healthcare Institute uses EBM's methodological design on how to gather and grade evidence (Timmermans and Berg 2003), but explicitly departs from Sackett and colleagues' (1996) emphasis on weighing such evidence in the context of individual patients. Instead, they weigh such evidence in the context of the Dutch population. Although professional insights and the patient perspective are taken into account as sources of information, the Dutch Healthcare Institute makes their evidence-based assessments relatively independent from the professional organizations.

Concluding remarks for part 1

All actors presented above legitimize their roles and decisions by relating to clinical epidemiological evidence. Each of these actors furthermore stresses the importance of contextualizing evidence. They do so on different levels and in line with their perceived roles. Individual professionals contextualize evidence in the counselling room in relation to individual patients; professional organizations (and the healthcare inspectorate) do so on the level of guidelines development in relation to patient groups; and the Dutch Healthcare Institute does so in policymaking in relation to the Dutch population.

Part 2: EBM's problematization

In this subsection, we present the main problems identified in the Dutch EBM discussion. We want to emphasize at the onset that it is mainly professionals who voice problems with EBM. Below, we discuss these problems in turn.

The biddable use of guidelines

The most frequently addressed problem voiced by professionals is about other professionals. It addresses the way in which evidence-based guidelines are used in the counselling room:

> '*Guidelines should provide support in the counselling room, but often they are used as key stones. You receive a patient with hypertension and check the guideline for treatment. A second question could then be 'who is actually sitting in front of me?' But often, doctors don't do that.*' (internist, focus group 2016)

These professionals stress the importance of weighing clinical epidemiological evidence next to clinical experience and patients' needs and wishes, but conclude that there is a lack of it in the counselling room. This is a longstanding problematization of EBM, frequently addressed in the literature as well (McCartney et al. 2014).

Importantly, those that address this problem relate such uncritical use of guidelines to forces external to individual professionals and their actions in the counselling room. A junior medical specialist tries to describe the cause of this problem:

> '*It is a kind of defensive medicine; because others can hardly question your actions when you followed the guidelines.*' (focus group 2016)

This professional articulates uncertainty amongst professionals. A form of uncertainty that constrains them to critically interpret – and where necessary divert from – guidelines in decision-making with and for individual patients.

Weighing evidence on the right level

We previously observed that professional organizations considered their guidelines as uniform agreements amongst professionals about how to treat patients. In order to function as such, these guidelines are informed by clinical epidemiological evidence, clinical experience and the patient perspective. Guidelines are thus much more than representations of clinical epidemiological evidence alone. Yet it is exactly this weighing of such evidence on the level of guideline development that is problematized by professionals we interviewed.

> *'When something is proven effective, then there is no problem in presenting that in guidelines [and considering that a uniform agreement]. The problem however is that many things in guidelines are based on consensus or authority. When something is based on consensus or authority, I have the feeling that it is even harder to divert from the guideline.'* (gynecologist, interview 2016)

There where advice in guidelines is based on consensus – or a weighted interpretation of evidence – professional organizations have already included the patient perspective and clinical experience on an aggregate level. In the counselling room, professionals subsequently feel that they are expected to follow the weighted advice (or rather agreement). Diverting from the guidelines then no longer means diverting from the clinical epidemiological evidence. Instead, it means diverting from the agreements that professional organizations, in collaboration with other actors, have made as a professional collective for individual professionals.

The professionals we interviewed thus feel that the interpretation of clinical epidemiological evidence next to patients' needs and wishes is important, but problematize the level on which such interpreting is done. These professionals criticize the emergent trend in which professional organizations translate evidence, clinical experience and the patient perspective into general agreements presented in guidelines (previous subsection). As these professionals argue, such guidelines can never capture the situated complexity of treating individual patients. They produce a false sense of collective professional control over healthcare decision-making and impede the role of individual professionals; which is to weigh evidence, next to clinical experience and patients' needs and wishes, with patients and in the counselling room.

The professional other

The fact that 'professional others' use such professional guidelines to inform their actor-specific actions further complicates the situation. In fact, such use is problematized by both professionals and representatives of professional organizations that engage in guideline development.

> '*What I find problematic is that many healthcare actors* [other than professionals] *see guidelines as "this is the way things need to be done and when you don't do it like that it is wrong." The inspectorate for instance talks about norms. In that phrasing already lies a very different meaning attached to guidelines.*' (representative of a knowledge institute, interview 2016)

The problem here is not that insurers and inspectorates use professional guidelines to monitor care provided by professionals per se; but rather, that in the way in which they do so, the advice presented in guidelines become norms that apply to the treatment of individual patients. Such norms can in turn be used to measure the quality of care provided to individual patients.

> '*The problem is that insurers use insights derived from averages of populations to measure the quality of care delivered to individual patients.'* (internist, focus group 2016)

In these quotes, professionals present a precarious tension between: (a) the way in which professionals translate professional guidelines to the context of individual patients; and (b) the way in which insurers and inspectorates use professional guidelines to determine whether the care that has been provided to individual patients is in line with the uniform agreements made. For most interviewed professionals, it is here that professional guidelines, useful for tinkering in the treatment for and with individual patients, consolidate into rigid norms.

Concluding remarks part 2

In the discussion on EBM, a distinction is drawn between the (ideal typical) patient-centered individual professional and the (problem typical) standardization-centered professional other. Whether this professional other is a health insurer, health inspectorate, or professional organization does not really seem to matter. What matters to those that problematize EBM is that clinical epidemiological evidence is reductionist and needs to be interpreted in the context of individual patients. At the same time, the counselling room is furthered as the site where evidence informed healthcare decision-making should take place. In the next section, we discuss why this line of reasoning is – in itself – a problem.

Part 3: Who decides based on what?

It is important to underline that other actors involved in the governance of care do not disagree with healthcare professionals that clinical epidemiological evidence needs to be interpreted and contextualized. In fact, most actors involved seem to interpret and contextualize such evidence themselves, albeit in and on their own terms (see first empirical subsection). The issue therefore seems to be not about whether clinical epidemiological evidence should be interpreted and contextualized (making the discussion about EBM's reductionist epistemology somewhat trivial), but rather about *who* should interpret and contextualize such evidence and *how*.

For most professionals that engage in the EBM discussion, the question who should interpret clinical epidemiological evidence is easily answered:

'*Health insurers should not be able to say: "there is no evidence for this so we do not pay". We sit in the counselling room not them... Insurers shouldn't mingle in these kinds of discussions, they should not determine, only pay.'* (gynecologist, interview 2017)

In the Netherlands, after the introduction of the Health Insurance Act in 2006, health insurers are formally given the role to represent their insured (patients) in negotiations with professionals about the price and quality of care. However, neither professionals nor insurers act as independent negotiators. As presented in the previous subsections, professionals are deemed by inspectorates to live-up to the uniform agreements presented in guidelines developed by professional organizations. Insurers are obliged to insure care included in the 'basic healthcare agreement'. In this context, evidence-based healthcare decisions are no longer under control of the professions, nor insurers, patients or the state. Instead healthcare decision-making has become fragmented and dynamic, influencing – and being influenced by – actors in different spheres (Van de Bovenkamp et al. 2014).

This creates direct tensions between actors involved about how to interpret and contextualize clinical epidemiological evidence and about the consequences of such interpretations. In the words of a gynecologist:

'*We just had a discussion with the Dutch Healthcare Institute about fertility preservation… There is this professional guideline that says it is considered good care when you discuss this and that with patients and when you decide to freeze an ovary. Putting it back, however, is considered another treatment. A process for later. So far, 70 children have been born by a replaced ovary. We thus see that it is possible. But the Dutch Healthcare Institute still considers it experimental* [in other words, the clinical epidemiological evidence for this treatment is not yet conclusive]. *Hence, it is not considered insured care. It feels so wrong that the professional guideline considers it good care, but the Dutch Healthcare Institute does not recognize it as such. It makes me mad and I think it is terrible.'* (gynecologist, interview 2016)

In abovementioned example, the Dutch Healthcare Institute relates to EBM's evidence hierarchy in order to make a binary decision that counts for all Dutch citizens; the exclusion of a treatment from the basic healthcare agreement due to limited and low graded evidence (Guyatt et al. 2011). Of key concern is that this interpretation of evidence by the Dutch Healthcare Institute differs from – yet does have consequences for – the evidence-informed actions of professionals in the counselling room. These professionals want to interpret the evidence that does exist in the context of individual patients. However, this becomes impossible because the basic healthcare agreement prescribes what insurers should con-

sider insured care. Professionals, in turn, can hardly recommend treatments that are not covered by health insurers. In the Dutch governance of care, the evidence-based advices and decisions of some actors can thus exclude and simultaneously limit the evidence-based actions of other actors.

It is in this context that many professionals emphasize and problematize EBM's reductionist epistemology and stress the importance of contextualizing such evidence in the counselling room. However, we would like to point out that the problem is not necessarily EBM's reductionism, but rather that two interdependent actors interpret and contextualize clinical epidemiological evidence in very different ways. The professionals interpret such evidence in the context of the situation of an individual patient; the Dutch Healthcare Institute interprets such evidence in the context of policymaking on the level of the Dutch population. The problem is thus not a lack of contextualization, but rather a difference in contextualization.

Conclusion

In this paper, we formulated the following research question: *How and by whom has the role of EBM in healthcare decision-making been problematized and why is that the case?* We took the Netherlands as our case study. We observed that EBM informs the practices of a variety of actors, operating on different levels (figure 4). We furthermore observed that each of these actors underlines the importance of contextualizing clinical epidemiological evidence. They contextualize such evidence within their own organizations (from the counselling room to policy offices), according to actor specific methodologies (from critical appraisal to systematic assessments) and in relation to actor specific objectives and/or responsibilities (from crafting individual treatment plans to proposing national policies). We also observed that in layered healthcare systems, the contextualization of evidence by one actor, can limit the ways in which other actors are able to contextualize such evidence.

Based on above-mentioned observations, we challenge dominant claims made in the Dutch EBM discussion, as well as in the international medical literature. In them, emphasis is often placed on the facts that: a) clinical epidemiological evidence is reductionist (Bolt and Huisman 2015); b) that such evidence should therefore always be contextualized (Hargraves et al. 2016); and c) that this no longer happens because professional others have adopted EBM uncritically and place constrains on individual professionals to contextualize clinical epidemiological evidence in the counselling room (Greenhalgh et al. 2014).

The main problem in abovementioned line of reasoning is the step from b to c. As we revealed, clinical epidemiological evidence is interpreted and contextualized on different levels, by different actors and in the context of a great many things; ranging from patients' individual needs and wishes, to quality and safety, healthcare expenditures and the protection of a collectively financed healthcare system. In this light, classifying EBM as a reductionist approach might be epistemologically sound. It is however nowhere near adequate for resolving the current tensions that have emerged around evidence-informed decision-making. In fact, all actors agree that EBM is a reductionist approach and that clinical epidemiological evidence needs to be contextualized. Taking this argument one step further, the problem seems to be that different actors contextualize evidence in and on their own terms. The contextualization of EBM is not absent, rather, it is all over the place.

Discussion

EBM is particularly problematized in a medical and scientific register. However, we argue that the discussion is actually fueled by: I) tensions between individual and public needs; II) the layering of institutional arrangement that have been introduced to deal with such tensions; and III) the differences between actors and their idiosyncratic roles and positions presumed and legitimized by such layered arrangements as well as evidence (Van de Bovenkamp et al. 2014; Felder et al. 2018). This makes the EBM discussion not just a professional affair, but rather a question of governance. We therefore urge policymakers and public administration scholars to take the EBM discussion seriously and to start scrutinizing the layering of healthcare systems and the ways in which such layers shape the ways in which evidence informed healthcare decision-making takes place. We furthermore urge medical professionals to take the EBM discussion beyond their counselling rooms and open-up to a broader discussion about the role of clinical epidemiological evidence in layered healthcare systems (Tovey et al. 2014; Berwick 2016).

References

Bacchi, C. (2012). Why study problematizations? Making politics visible. *Open Journal of Political Science*, *2*(1), 1-8.

Berlin, J. A., and Golub, R. M. (2014). Meta-analysis as evidence: Building a better pyramid. *JAMA, 312*(6), 603-605.

Berwick, D. M. (2016). Era 3 for medicine and healthcare. *JAMA*, *315*(13), 1329-1330.

Bolt, T., and Huisman, F. (2015). Evidence-based medicine in crisis? Een historisch commentaar op een actueel debat. *Tijdschrift voor Gezondheidszorg en Ethiek*, *25*, 102-107.

Deacon, R. (2000). Theory as practice: Foucault's concept of problematization. *Telos*, *2000*(118), 127-142.

Dutch Healthcare Institute (2015). *Beoordeling stand van de wetenschap en praktijk: Definitieve actuele versie 2015*. Diemen: Zorginstituut Nederland.

Felder, M., Van de Bovenkamp, H. M., Maaijen, M. M. H., et al. (2018). Together alone: organizing integrated, patient-centered primary care in the layered institutional context of Dutch healthcare governance. *Journal of Professions and Organization*, *5*(2), 88-105.

Flynn, T. R. (2005). *Sartre, Foucault, and historical reason, volume two: A poststructuralist mapping of history*. Chicago: University of Chicago Press.

Freidson, E. (1973). *The professions and their prospects*. Thousand Oaks: Sage.

Greenhalgh, T., Howick, J., and Maskrey, N. (2014). Evidence based medicine: A movement in crisis? *BMJ, 348*, 1-7.

Guyatt, G., Oxman, A.D., Akl, E. A., et al. (2011). GRADE guidelines: 1. Introduction - GRADE evidence profiles and summary of findings tables. *Journal of Clinical Epidemiology*, *64*(4), 383-394.

Halffman, W. (2003). *Boundaries of regulatory science* (PhD thesis). Amsterdam: Universiteit van Amsterdam.

Harbour, R., and J. Miller. (2001). A new system for grading recommendations in evidence based guidelines. *BMJ, 323*, 334.

Hargraves, I., Kunneman, M., Brito, J. P., et al. (2016). Caring with evidence based medicine. *BMJ*, *353*, 1- 2.

Helderman, J. K., Schut, F. T., Van der Grinten, T. E. D., et al. (2005). Market-oriented health care reforms and policy learning in the Netherlands. *Journal of Health Politics, Policy and Law, 30*(1-2), 189- 210.

Lascoumes, P., and Le Galès, P. (2007). Introduction: Understanding public policy through its instruments - from the nature of instruments to the sociology of public policy instrumentation. *Governance*, *20*(1), 1-21.

McCartney, M., Treadwell, J. Maskrey, N., et al. (2016). Making evidence based medicine work for individual patients. *BMJ, 353*, 1-6.

Mol, B. W., and Evers, H. (2017). Er is maar een werkelijkheid: RVenS-rapport tornt aan het gelijk van evidence based medicine (6 July). *Medisch Contact*.

Mouffe, C. (2005). *On the political*. London: Routledge.

RVenS (2017). *Zonder context geen bewijs: Over de illusie van evidence-based practice in de zorg*. Den Haag: Raad voor de Volksgezondheid en Samenleving.

Sackett, D. L., Rosenberg, W. M., Gray, J. M., et al. (1996). Evidence based medicine: What it is and what it isn't. *BMJ*, *312*, 71-72.

Timmermans, S., and Berg, M. (2003). *The gold standard. The challenge of evidence*. Philadelphia: Temple University Press.

Tovey, D., Churchill, R., and Bero, L. (2014). Evidence based medicine: Looking forward and building on what we have learnt. *BMJ, 349*, 1.

Van de Bovenkamp, H. M., De Mul, M., Quartz, J. G., et al. (2014). Institutional layering

in governing healthcare quality. *Public Administration*, *92*(1), 208-223.

Van de Bovenkamp, H. M., and Zuiderent-Jerak, T. (2015). An empirical study of patient participation in guideline development: Exploring the potential for articulating patient knowledge in evidence-based epistemic settings. *Health Expectations, 18*(5), 942-955.