

Empirical and philosophical analysis of physicians' judgments of medical indications

Joar Björk^{1,2}, Niels Lynøe² and Niklas Juth²

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Abstract

Background: The aim of this study was to investigate whether physicians who felt strongly for or against a treatment, in this case a moderately life prolonging non-curative cancer treatment, differed in their estimation of medical indication for this treatment as compared to physicians who had no such sentiment. A further aim was to investigate how the notion of medical indication was conceptualised.

Methods: A random sample of GPs, oncologists and pulmonologists ($n = 646$) comprised the study group. Respondents were randomised to receive either version of a case presentation; in one version, the patient had smoked and in the other version she had never smoked. The physicians were labelled value-neutral (65%) and value-influenced (35%) on the basis of their attitude towards the treatment.

Results: In the 'value-influenced' group, there was a significant difference in the estimation of medical indication for treatment depending upon whether the patient had smoked (50% (95% CI: 41–59) or never smoked (67% (95% CI: 58–76) ($\text{Chi-2} = 5.8$, $\text{df} = 1$; $p = 0.016$)). There was no such difference in the 'value-neutral' group.

Conclusion: This study shows that compared to value-neutral physicians, value-influenced physicians are more likely to base decisions of medical indication on medically irrelevant factors (in this case: the patient's smoking status). Moreover, medical indication is used in an ambiguous manner. Hence, we recommend that the usage of 'medical indication' be disciplined.

Keywords

Resource allocation, clinical ethics, health, concept of clinical ethics, health care economics, health care, clinical ethics, right to health care, clinical ethics, public health, clinical ethics

Introduction

In a medicolegal case where a man has injured his knee at work, a physician (an orthopaedic surgeon) provides the following testimony: 'Given the mechanical symptoms of catching and lock, his failure to progress with rest, a home exercise program and anti-inflammatories it is medically indicated to proceed with right knee arthroscopy'.¹ At first glance, a statement such as this – especially made by a specialised physician in the setting of a court case – may seem persuasively objective and straight-forward. In this paper, however, we will argue that it may be neither of those two things. We want to point out that our aim is not to discredit this individual physician nor to further comment on that particular case, but rather to focus on the role that physicians' private values may play in framing and understanding the concept of medical indication in a wide variety of clinical settings.

Health care is, by necessity, a value-laden enterprise. Like any institution that purports to achieve

something (in this case: improved health), it shows already by this intention that its actions are at least partly governed by values. In striving towards improved health for patients, health care thus presupposes that improved health is desirable. This also goes for those working within health care: a physician who does not value good health above bad health and benevolence above malevolence would seem badly suited for his/her job.

¹Department of Research and Development, Region Kronoberg, Karolinska Institute of Medicine, Stockholm Sweden

²Stockholm Centre for Healthcare Ethics (CHE), Karolinska Institute, LIME Stockholm, Sweden

Corresponding author:

Joar Björk, Karolinska Institute of Medicine, Tomtebodavägen 18 A, Stockholm 171 77, Sweden.

Email: joar.bjork@ki.se

One common view holds that the most important values in health care are autonomy, benevolence, non-maleficence and justice.² Although controversies regarding these ‘four principles’ remain, these values have become so accepted that they now form part of some health care systems’ official regulation.³ In the following, we will refer to these as the ‘official values’ of health care.

At least two of the above-mentioned values (benevolence and non-maleficence) are directly relevant to the concept of medical indication. Judging that a procedure is medically indicated for a patient is in itself an evaluative process, as the physician balances the individual patient’s health impairment versus the achievable health improvement and the possible side effects.⁴ If the achievable health improvement is sufficiently large and the possible side effects sufficiently small, the beneficence and non-maleficence principles would indeed support the physician’s judgment of a specific medical treatment as ‘medically indicated’.

However, since physicians are human beings it cannot be taken for granted that they all fully share the official values. It is reasonable to expect that some of them hold certain private value convictions that may be in conflict with the official values. In the following, we will call such convictions ‘private values’, as opposed to ‘official values’ which will be used for values conforming to the ethical principles mentioned above, regardless of whether these are shared by individual physicians or not.

Ethical problems may result if any physician’s private values differ considerably from the official values. If physicians are allowed to act on such private values, predictability and transparency may be impaired, which, in turn, might undermine patients’ potential to make informed health care choices. To avoid this, many health care systems have checks and balances to limit the scope of physicians’ fancies. Indeed, health care legislation and ethical codes of conduct are often based upon the official values mentioned above, striving to bar influence by physicians’ private values in the sense we have defined them. In Sweden, there is a long positivist tradition where civil servants such as physicians are assumed to be neutral administrators of official guidelines and values.⁵ This is illustrated, for instance, by the fact that there is no room for conscientious objections in the Swedish healthcare system. Ideals and regulations such as these in themselves work to prevent physicians acting on the basis of their own whims.

However, there is a body of empirical studies suggesting that despite all checks and balances physicians’ private values do sometimes enter clinical practice implicitly or ‘through the back door’.⁶ This expression refers to a cognitive process described by, among others,

Molewijk *et al.*⁷ who dubbed it ‘implicit normativity’. Molewijk *et al.*⁷ describe how private values affect clinical practice by informing physicians’ impression of, and communication regarding, the factual basis of medical decisions. As the physicians’ private values are hidden in the presentation of factual aspects of the situation, they can effectually become ‘invisible’ to all parties (including even the physicians themselves). The issue has been further investigated by Juth and Lynoe,⁸ who have instead used the term ‘value impregnation’ of factual aspects. This term indicates that the factual aspects of a decision-making process may be more or less impregnated by a physician’s private values. Take, for instance, a physician who is privately in favour of physician-assisted suicide (PAS), but works in a setting where PAS is not permitted. When faced with a dying patient in pain, this physician may – by route of conscious or unconscious value impregnation – make a factual overestimation of the patient’s pain, leading to the administration of possibly lethal doses of pain relief. Conversely, a physician who does not support PAS may in the same situation underestimate the pain, leading to possibly insufficient doses of pain relief.⁹

When physicians’ private values impregnate factual aspects of medical decisions, this can lead to several problems. First, it may compromise patients’ autonomy.⁶ Obviously, the more biased the physician’s information to the patient is, the harder it will be for the patient to reach a decision in the light of her own values and wishes.² (Conflicts with patient autonomy may of course arise even relative to the ‘official values’, but this is beyond the scope of the present study.) Secondly, if physicians’ private values implicitly affect the clinical decision-making process, the choice of clinical examinations and treatments offered to the patient will be dependent upon these values. This may lead to arbitrariness, which is clearly in conflict with the so-called formal principle of justice (i.e. that relevantly equal cases should be treated equally), and by extension with the health care codex in several countries, for instance Sweden.¹⁰

Unlike physicians’ private values, it is commonly accepted that the patient’s private values should be accounted for in the medical decision-making process.¹¹ As individuals differ, so patients differ in attitudes to treatment as well as in their preferred levels of information and risk taking. Such attitudes may, in line with the autonomy principle (an official value), legitimately affect how and which decisions are ultimately made. However, it is unclear whether such patient values are internal or external to the concept of medical indication. For instance, can a patient’s strong desire for a treatment constitute or augment a medical indication for that treatment? There seems to be no consensus on this issue. The Merriam-Webster Medical Dictionary

simply defines medical indication as ‘a symptom or particular circumstance that indicates the advisability or necessity of a specific medical treatment or procedure’,¹² giving no clue as to what these circumstances may be. In clinical practice, physicians sometimes speak of two kinds of indications: medical indications on the one hand and ‘non-medical indications’, ‘extended indications’, ‘social indications’ or ‘humanitarian indications’ on the other hand. Although the latter kind of indications may be invoked in any medical setting, they seem to be most often used in ethically complex medical situations such as beginning-of-life issues, life style questions or issues in palliative care. Some examples are abortions, sterilisations, Caesarean delivery on maternal request, sedation-therapy on request at the end of life and certain plastic-surgery operations (e.g. culturally motivated hymen restorations).^{9,13}

The present paper rests on two hypotheses. The first is that – in contrast to perceptions of the physician as an impartial administrator of official values – physicians’ private values do sometimes affect medical decision making. The second is that the concept of medical indication is unclear and that different physicians may mean quite different things when they use the term.¹⁴ In the following, we will try to specify how the uses may differ and what implications these differences may have, especially in regards to value impregnation of medical indications associated with priority setting.

We have previously conducted an experimental study among Swedish physicians using a randomised controlled design. The results indicated that although most physicians stated that patients should not be held responsible for their conditions, a significantly larger proportion of physicians were inclined to offer a new and expensive treatment to a non-smoking lung-cancer patient than to a smoking lung-cancer patient.¹⁵ For the present paper, we used the same set of data to investigate whether the participating physicians estimate the medical indication for treatment differently depending upon the patient’s smoking status, which would suggest that the concept of medical indication is open to value-impregnation. Also, we wanted to examine how the physicians accounted for their judgments of medical indication, again with a special eye to possible value impregnation of this concept.

Methods

The questionnaires

Respondents were randomised to receive one of two versions of a questionnaire containing a case

description of a female 59-year-old lung-cancer patient. The two versions were identical but for one factor: in one version, the patient was a current smoker with a 40 pack-year smoking history, whereas in the other version, she had never smoked.¹⁵ By using this design, inspired by studies by Joshua Knobe,¹⁶ we aimed at capturing possible differences in response patterns attributable to the patients’ smoking status. In the case description, it was stated that the patient had incurable, disseminated lung cancer, but that a novel treatment could prolong her life approximately 10 weeks. However, the treatment was stated to be expensive and not routinely offered. The questionnaires then posed the questions whether or not there was a medical indication to offer the new treatment, and whether the respondents thought that the treatment should be offered (response options to both questions: yes/no).

The respondents were further asked whether their own trust in health care would be affected if this kind of treatment was routinely offered (response options: decrease/not change/increase). Those who claimed that their trust would increase or decrease were classified as *value-influenced*, and those who claimed their trust would not be affected were classified as *value-neutral*. The rationale for this dichotomisation was the assumption that those who said their trust would decrease or increase thereby expressed an evaluation of the act in question (i.e. to offer or not offer treatment). Physicians who said their trust would decrease if the treatment were to be offered were thus interpreted to clearly oppose the routine offering of this treatment (and conversely). The group who, in contrast, reported their trust would not be changed if the treatment was to be routinely offered were interpreted to find this prospect neither good nor bad.¹³

Participants

The study group in the present analysis included a random sample of 1200 physicians (mainly oncologists, pulmonologists and GPs) of which 646 responded, giving a response rate of 53.8%. The random samples were drawn from a commercial database (Cegedim/Stockholm) and came from all over Sweden. The participants were 30–78 years (mean: 56 years) and the sex balance was 52% male and 48% female respondents.

Randomisation and blinding

The two versions of the questionnaire were randomly distributed to all participants by paper mail, including two reminders. The randomisation was executed by

allotting each participant a list number, giving all even numbers ‘the smoking patient version’ and all odd numbers ‘the non-smoking patient version’. The randomisation procedure resulted in two groups which was similar in all relevant aspects, results which have been presented elsewhere.¹⁵ In the introductory letter, there was no mention of another version of the case presentation. Thus, the design of the experiment was blinded to the respondents.

Analysis

Chi-2 test was used to analyse contingency tables. The results were presented as proportion with 95% confidence interval (CI). Logistic regression analysis was performed in order to study associations between the dichotomous main outcome variable and the independent variables that might influence the outcome. We also included interactions in the logistic model to test for non-additivity of the independent variables. A p -value < 0.05 was considered statistically significant. The data were registered and analysed using the Epi-info software 6.04 as well as SAS[®] System 9.4, SAS Institute Inc., Cary, NC, USA.

When analysing the comments, we used a modified version of content analysis¹⁷ focusing on the respondents’ stated reasons in support of their judgment of medical indication. We also tried to divide the reasons into factually based reasons and value-based reasons.

Ethics

All respondents were informed about the study’s purpose and voluntary nature in a simple, comprehensible language. However, the Joshua Knobe-inspired method which effectively conceals the specific research aim from the respondents entails an ethical dilemma common to all partly deceptive research methods. In brief, the dilemma is that the respondents are asked to participate under auspices that do not exactly match the real purpose of the study.

The study protocol was approved by the Stockholm Regional research ethics committee (Dnr 2014/344-31/2).

Results

When comparing the physicians who received the non-smoking patient version of the questionnaire and the physicians who received the smoking patient version, the first group tended to be more inclined to offer the proposed treatment than the second group

Table 1. The proportions of physicians who found a medical indication for treating the non-smoking and the smoking lung-cancer patient, respectively.

	Non-smoking patient	Smoking patient
<i>There is a medical indication (yes)</i>		
Value-influenced (n = 102), (n = 115)	67% (58–76)	50% (41–59)*
Value-neutral (n = 196), (n = 197)	53% (46–60)	53% (46–60)
<i>The treatment is offered (yes)</i>		
Value-influenced (n = 105), (n = 116)	78% (70–86)	57% (48–66)**
Value-neutral (n = 197), (n = 198)	70% (64–76)	67% (60–74)

Note: The physicians have been classified as value-influenced or value-neutral. A similar comparison has been performed regarding the physicians’ inclination to offer the same treatment. The proportions are presented with 95% confidence intervals (CI). Numbers in brackets refer to respondents who received the non-smoking patient version and the smoking patient version of the questionnaire, respectively.

An * indicates that the difference was significant ($p = 0.016$) and ** that $p = 0.001$. In a logistic regression analysis considering possible interaction, the corresponding p -values were 0.06 and 0.02, respectively.

(57.3% vs. 52%). This difference, however, was not significant (Chi-2 = 1.78; $df = 1$, $p = 0.18$).

In order to further analyse the data, we divided the physicians into the above-mentioned categories of value-influenced and value-neutral physicians. Under this definition, 65% ($n = 393$) were classified as ‘value-neutral’ and the remaining 35% ($n = 207$) were classified as ‘value-influenced’. There was no statistical difference in the relative proportions of the value-neutral to the value-influenced physicians among those who had received the smoking and non-smoking patient version of the questionnaire.

Among the value-influenced physicians, 67% (95% CI: 58–76) stated that there was a medical indication for treating the non-smoking lung-cancer patient, while 50% (95% CI: 41–59) found a medical indication for treating the smoking patient (Chi-2 = 5.8, $df = 1$; $p = 0.016$). Among value-neutral physicians, the corresponding proportions were 53% in both groups (95% CI: 46–60) (Chi-2 = 0.003, $df = 1$; $p = 0.96$) – see Table 1.

We also used the dichotomy of value-influenced and value-neutral to compare the two groups’ inclinations to offer treatment. This analysis showed that 78% (95% CI: 70–86) of the value-influenced physicians

Table 2. Categories of stated arguments for perceiving presence or absence of medical indication for treatment among respondents' comments.

Topic of argument	Respondent judged there is a medical indication for treatment (n = 49)	Respondent judged there is no medical indication for treatment (n = 52)
Patient's expected survival time	Survival time is sufficient <i>or</i> Survival time could be longer than stated (22)	Survival time is insufficient <i>or</i> survival time could be shorter than stated (19)
The proposed treatment's efficacy and evidence base	The proposed treatment is effective <i>or</i> The proposed treatment has evidence (13) <i>'If there is medical evidence for treatment, there is a medical indication'; 'If it prolongs life there is a medical indication'</i>	The proposed treatment is ineffective <i>or</i> The proposed treatment lacks evidence (4)
Patient's suitability for treatment	The patient seems suitable (3) <i>'She seems healthy'</i>	Patient seems ill suited (5) <i>'She seems very ill'</i>
Attitude towards life prolonging treatment	All treatment options should be tried (6)	Unethical to prolong a life of suffering (3)
Indications for treatment other than purely medical (narrowly conceived)	Yes (5) <i>'Medically indicated so she can live past her grandchild's birthday'; 'It is medically indicated if the patient wants it'; 'medically indicated to show empathy'</i>	Yes (9) <i>'Not medically indicated but there is a psychological gain'; 'Not medically indicated but we have to show empathy'; 'Medically indicated, but whether to offer treatment depends on what other financial interests compete'.</i>
Cost efficacy	(no comments)	Too low (12) <i>'Prioritizations are necessary'; 'Resources should be put to better use'</i>

Note: Arguments are listed by main topic of argument. Numbers in brackets refer to amount of comments. Italicised captions are actual quotes from comments.

would offer treatment to the non-smoking patient as opposed to 57% (95% CI: 48–66) in regards to the smoking patient (Chi-2 = 11.19, df = 1; $p = 0.001$). Among the value-neutral, the corresponding proportions were 70% (95% CI: 64–76) versus 67% (95% CI: 60–74); (Chi-2 = 0.376, df = 1; $p = 0.540$). Please see Table 1.

Analysing the relationship between physicians' estimation of medical indication and their inclination to treat the patient, we found that among those who found a medical indication for treatment, 92% (95% CI: 89–95) were inclined to offer treatment, whereas among those who found no medical indication for treatment, 38% (95% CI: 32–44) were inclined to offer treatment.

We also analysed the comments to the question of whether there was a medical indication to offer treatment. A wide range of arguments/reasons were offered in support of the estimations of a medical indication for treatment. There were no systematic differences in arguments between respondents of the two versions of the questionnaire. Please see Table 2.

Discussion

The empirical results

In the whole group of physicians studied, there was no difference in the perception of medical indication for treatment depending upon the patient's smoking status. However, when the group was divided into those who seemed to hold an evaluative stance in regards to the proposed treatment (pro or contra) and those who seemed to be value neutral in regards to the proposed treatment, we found a significant difference. The 35% of the physicians who were classified as value-influenced, unlike their value-neutral counterparts, discriminated between the non-smoking and the smoking patient in their estimations of medical indication for treatment as well as their inclination to offer the treatment. The 65% who were classified as value-neutral, on the contrary, did not discriminate between the smoking and non-smoking patient on either account. In this, they acted in accordance with the Swedish official values, which stress that patients' previous behaviour should not influence access to treatment.

Molewijk *et al.*⁷ claim that all physicians' decisions are more or less influenced by official as well as private values. If the distinction between value-influenced and value-neutral physicians is plausible, it can be argued that at least in this setting the majority of the physicians seem not to let private values influence their estimation of the medical indication for the proposed treatment and their inclination to offer the treatment. Whether this is because they discipline their potential subjectivity, or whether as a matter of fact they do not hold any strong private values regarding the proposed treatment, cannot be assessed in the study. It should also be borne in mind that previous studies suggest that the relative proportions of value-neutral to value-influenced physicians might depend upon the level of controversy surrounding the issue in question.^{6,18}

Since the smoking patient questionnaire and the non-smoking patient questionnaire differed solely on the point of the patient's smoking status, which in turn was framed as being of no prognostic relevance, the results indicate that the value-influenced physicians incorporate medically irrelevant aspects in their assessment of medical indication for treatment. In this particular study, such aspects would be biases against smoking patients. We suggest that these physicians' assessment of the factual aspects of medical indication could be value-impregnated. As nearly all participating physicians stated that patients' responsibility should not count when deciding whether or not the patient should be offered a new and expensive treatment, it may be that some physicians' private values were tacitly and unconsciously brought in 'through the back-door'.⁶ We suggest that the back door metaphor might be interpreted as private values impregnating the estimations of factual aspects of 'medical indication'. The impregnation procedure might be unconscious and invisible both for the participants themselves and others concerned. In this way, the physicians are seemingly not acting against the official values, but our applied experimental design makes it possible to reveal the procedure and the concealed agenda behind it.

Qualitative and philosophical analysis of medical indication

The empirical results provide some clues on how to analyse the concept of medical indication. As noted in the introduction, different people can mean different things when they say there is a medical indication for treatment. We propose that this is due to two different but related conceptual unclaritys: firstly, the unclarity regarding the concept of medical indication itself, and secondly the unclarity regarding the conceptual relation between finding a medical indication for treatment and actually offering this treatment.

At its analytical core,¹⁹ the concept of 'medical indication' for a treatment seems to presuppose or establish only that there is evidence to show that the treatment is effective and reasonably safe. This is supported by the lexical Merriam-Webster definition of medical indication, which states that a treatment is medically indicated when advisable or necessary. Thus, it is reasonable to expect that when physicians claim a treatment is medically indicated, they mean *at least* that medical evidence backs its usage. Indeed, the comments in our data showed many physicians explaining their judgment of medical indication along these lines, e.g. '*if there is medical evidence for treatment, there is a medical indication*'.

Although consistent with the analytical core, many other comments showed that many respondents also included non-medical/extended considerations into the notion of medical indication itself, e.g. '*medically indicated so she can live past her grandchild's birthday*'. Thus, it seems that whereas some physicians consider the above-mentioned reference to evidence of effect as a sufficient and necessary reason for judging that there is a medical indication for treatment, others see reference to evidence of effect as insufficient for medical indication. It was not clear from our data whether these physicians also consider it unnecessary. However, the absence of comments implying that the treatment was effective and reasonably safe, but still not medically indicated, seems to speak against this. All in all, the comments supported the hypothesis that there is great ambiguity regarding the interpretation of 'medical indication', and that some physicians have a much broader view of the concept.

The second conceptual unclarity concerns the relationship between medical indication and the physician's inclination to treat. Two of this paper's three authors are physicians, and our clinical experience is that when physicians speak of something being medically indicated, they are doing more than making a factual claim. This point can be analysed by reference to the concept of 'conversational implicature' from the field of language philosophy.

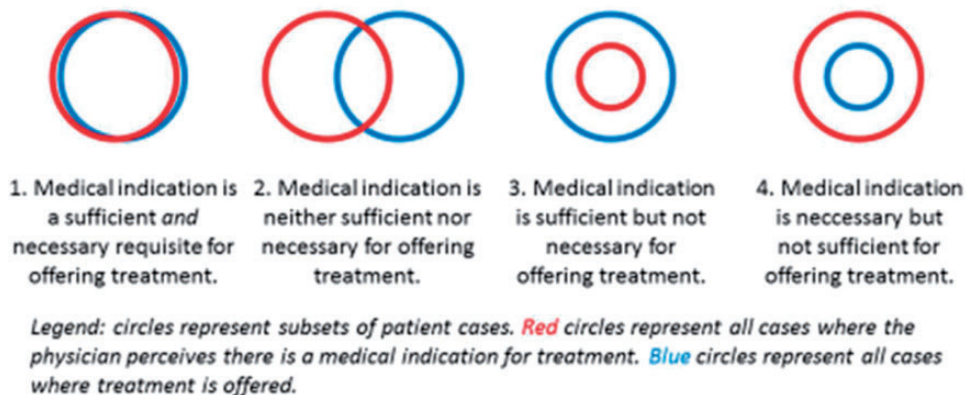
The conversational implicature of a statement is what the statement could be taken to mean, when the full context of the situation is accounted for.²⁰ Often, this amounts to much more than what is literally being said. If, for instance, I ask you if I can come around this afternoon and you answer 'I will be at home', I may be justified in thinking you did not merely offer me information about where you will be this afternoon, but rather that we have made a date of sorts. In much the same way, a physician saying 'there is a medical indication for treatment' will often be interpreted, by conversational implicature, as meaning 'treatment should be offered' or, at least, 'there is a reason to offer treatment'. However, although related, these propositions

are not necessarily synonymic or extensionally equivalent. Conceptually, the correlation between what a physician means when s/he claims there is a medical indication to offer treatment and that s/he is inclined to offer treatment can be illustrated thus:

from that group regarding why they would not offer treatment concerned cost efficacy: *'prioritizations are necessary'*; *'resources should be put to better use'*.

Obviously, positions 2 and 3 are 'including' in the sense that they lead to more patients being offered treat-

Relations between physicians' judgments of medical indication for treatment and their inclinations to offer this treatment – theoretical possibilities



Indeed, the results of this study can be interpreted as showing support among physicians for all four views described above. Analysis of the comments gave further corroboration of this hypothesis. Returning again to those physicians who seem to equate medical indication with what we called the concept's minimal interpretation (reference to efficacy and safety), most displayed a correspondence between their judgment of the treatment's efficacy and their judgment of whether treatment should be given. Thus, most of those who saw the treatment as efficient were inclined to offer treatment, and most who saw treatment as ineffective were disinclined to offer treatment. We propose that at least some of these efficacy-determined physicians adhere to position 1 above, making a strong link between medical indication and offering treatment.

If the existence of position 1 physicians was only indirectly suggested by the results, there were very many comments that clearly expressed support for positions 2 or 4 (possibly also 3). In regards to the first unclarity mentioned above, these physicians seem to let humanitarian considerations remain external to the understanding of medical indication proper, but still influence the choice to offer treatment. One example of many such comments was: *'not medically indicated but we have to show empathy'*.

The results also indicated that some physicians who judged there was a medical indication for treatment nevertheless opted not to offer treatment. In the scheme above, that would put them in position 4. All comments

were from that group regarding why they would not offer treatment than only those with a firm medical indication (under all interpretations of that concept). In contrast, position 4 is "excluding" as opposing reasons can subtract from the medical indication to lead to a situation where treatment is not offered despite there being a medical indication. As seen in the comments, the reasons for not giving the treatment may be prioritisation considerations in a situation of economy shortage.

Summing up so far, we have described two conceptually different ways by which physicians include other aspects than the purely medical ones (i.e. efficacy, safety, and evidence) in treatment decisions. The first way is to expand the notion of medical indication to encompass for instance humanitarian issues. The second way is to keep the notion of medical indication free from such issues, but base treatment decisions on a range of indications.

We would like to point out that both of these practices may be in conflict with established systems for health care prioritisation. In Sweden, for instance, the health care law stipulates that all priority setting decisions should conform to the principles of human dignity, needs and solidarity and cost efficacy.³ As can be seen, there is no officially sanctioned principle that regulates priority for patients with 'non-medical' indications. In theory, it could be argued that extended/humanitarian aspects fall under the needs principle above, but this is not uncontested.¹⁰ Thus, under the current Swedish health law, humanitarian aspects have an unclear standing in priority setting situations, and any physician who

frequently treats patients on a humanitarian indication may by opportunity cost decrease health access for patients managed by other physicians who do not base their treatment on this principle.¹³ Thus, pending a philosophically sound work-up of the place of humanitarian indications within the hierarchy of prioritisation, it is probably wise to use this principle with moderation.

Some apparent contradictions among the respondents' comments also merit mention. For instance, there was great variance in the responses to issues of prognosis and expected survival time. Many physicians who found a medical indication for treatment pointed out that the patient '*seemed healthy*' and might live longer than the expected survival time on the proposed treatment. On the other hand, physicians who did not find a medical indication pointed out she '*seemed very ill*' and might live shorter. In fact, the text in the vignette provided very little clues to how 'healthy' she was, other than the fact that without treatment she would likely die within three weeks. As for the survival on treatment, deviations from the mean are of course possible in both directions. It is also an open question what constitutes 'sufficient' time to merit treatment. (However, one respondent actually provided a clear answer to this, commenting: '*one month is clinically significant time*').

These findings give rise to the question: did the physician start with an inclination to treat and adjust his/her judgment of expected time accordingly, or did the judgment of time provide basis for the inclination to treat? As our results cannot answer this question, we do not claim that these response patterns prove that physicians' value impregnate their perceptions of survival time. But the finding that some physicians used the patient's smoking status as basis for the medical indication indicates that there is a risk of value impregnation, and the judgment of expected survival time is a judgment that may easily be impregnated.

On the same note, we found it interesting that some respondents who denied there being a medical indication for treatment claimed there was insufficient evidence for treatment. In fact, the questionnaire clearly stated that the proposed treatment had been thoroughly studied. Obviously, this is an area where value impregnation can have far-reaching implications. To the critical-minded, it is almost always possible to claim there is insufficient evidence: most bodies of evidence contain contradictions and controversies. Thus, whenever a physician does not want to offer treatment, s/he can offer lack of evidence or 'insufficient' expected survival time as reasons for not offering treatment.

Implications of the study

If a physician's anti-smoker bias determines patients' access to treatment by affecting how the physician

estimates a patients' medical indications for treatment – as this study has indicated – this is bad news for individual patients as well as for justice in health care priority setting. It is bad news because whether or not such a patient will receive treatment will depend on the private values of the decision-making physician. In other words, it becomes arbitrary whether or not such a patient will be offered the treatment. Matters are further complicated by the fact that such value-impregnation may be partly unconscious. In a recent study of decision-making capacity evaluations in Switzerland, Hermann *et al.*⁶ found that a quarter of the studied physicians, when asked openly, stated that their own values influenced their evaluations, while equally many claimed that their own values had no effect at all. One way to raise awareness of this potential problem could be for clinicians to routinely question and discuss underlying evaluative forces in clinical decision making. This is probably most important when the issue at stake is controversial or value-laden, as when involving smoking patients. Further empirical studies are needed to show how such awareness-raising activities may be arranged in the clinical setting.

As indicated by our discussion above, there seems to be no agreement among physicians as to what is meant by 'medical indication'. This ambiguity increases the risk of value-impregnation, and we therefore propose that the medical community should be more careful when using this concept. While there is no way to ensure a terminology free from value-impregnation, the ambiguity can be partly avoided if physicians reserve the moniker 'medical indication for treatment' for what we have called its analytical core or minimal interpretation (the claim that evidence shows the treatment is effective and safe enough), and call other indications (social, humanitarian etc.) by another name. Furthermore, we recommend that physicians reflect about how and when their own private values influence decision-making explicitly or implicitly, for instance through value impregnation of supposedly 'hard' facts. The British ethicist Martyn Pickersgill²¹ writes of 'the essential entanglement of the moral and the factual' and as we do not see any way to permanently disentangle the factual from the moral, we hope instead that this paper may be a starting-point for a discussion about that very entanglement.

Another practical implication of this study is the following: if there is disagreement between physicians (or physicians and patients) in a decision-making situation, it may be helpful to first examine whether the disagreement is based on the judgment of factual aspects and, if so, also examine whether this difference may depend on possible value-impregnations.

Strengths and weaknesses

The obvious strength of this study is its randomised, controlled design. This method yields robust data and in this setting allowed us to examine the effect played by the patient's smoking status on the estimation of medical indication. As the randomisation process resulted in comparable groups regarding relevant aspects, the design minimised the risk of bias.

However, due to the relatively low response rate, we cannot know to what degree the results are generalisable at least regarding the proportions of those who are value-neutral and value-influenced. Comments made by the respondents indicate that some physicians found the case description over simplified, which could be a reason for the low response rate.

The respondents' answering patterns and comments raised a wealth of philosophical questions, primarily concerning the notion of 'medical indication'. Therefore, we set out to investigate this topic in a long discussion section. By necessity in a mixed empirical/philosophical paper such as this, the philosophical analysis to some extent goes 'beyond' what can be strictly inferred from the empirical material. We thus wish to point out that the final interpretative result is our estimation of a best guess, and that we welcome alternative interpretations to the matter.

In this paper, the group labelled 'value-influenced physicians' were those whose trust in health care would be altered – for better or worse – if the proposed therapy was to become routinely used. The underlying assumption is that such an alteration of trust implies that the respondents feel that important health care values are truly at stake in this issue, in a way that the value-neutral physicians do not. Thus, it is only in regards to the adoption of the proposed treatment as routine that value-neutral physicians are indicated to be value-neutral. Outside of that, they may very well harbour for instance strong liberal and humanitarian values that are in accordance with the official values. What is of concern here is, then, a very limited interpretation of the term 'value-neutral'. This interpretation is furthermore our own and its validity needs to be scrutinised further.

Finally, we wish to point out that in the qualitative analysis, the counting of comments is not intended to give an estimation of the relative frequency of certain opinions in the entire set of data. As only a minority of respondents commented on their responses, the comments can only give clues on how to interpret the rationales for understanding medical indication in the studied group.

Conclusion

This study indicates that approximately a third of the studied physicians let their private values influence the

judgement of whether or not to offer treatment to a smoking lung-cancer patient, and their estimation of the medical indication for such treatment. In contrast, the majority of the studied physicians either held no bias against smokers, or were able to keep such private values out of the medical decision-making process, and hence made more fair decisions – or at least decisions that were in accordance with official Swedish health care norms.

Our analysis of the concept of medical indication highlights three problems with this concept. First, that although physicians and patients may not realise this, stating that a treatment is 'medically indicated' is by definition an evaluative endeavour. Second, that the term is plagued by conceptual unclarity. Third, that physicians sometimes – deleteriously – seem to involve private values such as bias against smoking in estimations of medical indication for treatment. To ameliorate these problems, we suggest that physicians engage in discussions regarding the official and possible private value base of decisions, and that the term medical indication be reserved for statements about evidence of efficacy and safety of treatment only.

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