The challenge of implementing Less is More medicine

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Published in:
European Journal of Internal Medicine

DOI:
10.1016/j.ejim.2020.04.014

Publication date:
2020

License:
CC BY-NC-ND

Document Version:
Accepted author manuscript

Link to publication

Citation for published version (APA):
https://doi.org/10.1016/j.ejim.2020.04.014

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THE CHALLENGE OF IMPLEMENTING LESS IS MORE MEDICINE:
A EUROPEAN PERSPECTIVE

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ABSTRACT (256 words)

The concept of Less is More medicine emerged in North America in 2010. It aims to serve as an invitation to recognize the potential risks of overuse of medical care that may result in harm rather than in better health, tackling the erroneous assumption that more care is always better. In response, several medical societies across the world launched quality-driven campaigns (“Choosing Wisely”) and published “top-five lists” of low-value medical interventions that should be used to help make wise decisions in each clinical domain, by engaging patients in conversations about unnecessary tests, treatments and procedures. However, barriers and challenges for the implementation of Less is More medicine have been identified in several European countries, where overuse is rooted in the culture and demanded by a society that requests certainty at almost any cost. Patients’ high expectations, physician behaviour, lack of monitoring and pernicious financial incentives have all indirect negative consequences for medical overuse. Multiple interventions and quality-measurement efforts are necessary to widely implement Less is More recommendations. These also consist of a top-five list of actions: 1) a novel cultural approach starting from medical graduation courses, up to 2) patient and society education, 3) physician behaviour change with data feedback, 4) communication training and 5) policy maker interventions. In contrast with the prevailing maximization of care, the optimization of care promoted by Less is More medicine can be an intellectual challenge but also a real opportunity to promote sustainable medicine. This project will constitute part of the future agenda of the European Federation of Internal Medicine.

Key words: overuse, waste, medical education, healthcare, choosing wisely

ACKNOWLEDGEMENTS

We wish to thank Sarah Giannini for her editorial assistance.

Word count 3900
INTRODUCTION

Healthcare systems in developed countries are facing a tough economic reality and new challenges. These challenges include defining the values, objectives and tasks of sustainable medicine. Near universal access to quality health care is one of the hallmarks of the "European model", but how can we ensure the sustainability of European healthcare systems in an era of aging populations and budget restriction? Even in wealthier countries, such as Switzerland, more than 30% of health expenditures are directly borne by households through co-payments and deductibles. It has become a real public health problem, as 15% of Swiss citizens waive medical care for financial reasons even while being required to purchase mandatory insurance. Containing costs and avoiding unnecessary practices have become a priority to ensure quality and access to care for everyone in the long term. Indeed it is estimated that between 22% and 30% of health care interventions may be considered potentially inappropriate.

There is, however, an additional aspect that is of primary importance for patients and physicians, whose application is directly related to economic side-effects. Indeed, distinguishing health from disease has always been the fundamental challenge for medicine. A major concern has been not to miss a disease, to avoid problems of underdiagnosis and undertreatment. This has been supported by sustained and powerful technological growth. However, we are now facing the other side of the coin that is: too much medicine. Indeed, increasing access to resources for investigating illness at ever increasing resolution threatens to leave us no longer seeing the wood for the trees. As such, mounting evidence becomes a threat to human health from overdiagnosis, and might eventually cause the harms and waste
from unnecessary tests and treatments\textsuperscript{4}. Notably, overdiagnosis and overtreatment coexist in many healthcare settings, in both rich and poor countries\textsuperscript{5}.

Following this dual perspective, with both qualitative (patient safety and avoidance of low-value, ineffective care) and quantitative aspects (costs), a new trend emerged in medicine: \textit{Less is More}. “Less is more” medicine seeks to recognize the potential risks of overuse of medical care that may result in harm rather than in better health, with an accompanying potential unnecessary increase of cost.

Several medical societies across the world launched quality driven anti-waste campaigns such as Choosing Wisely in US\textsuperscript{6}, Smartermedicine in Switzerland\textsuperscript{7}, Slow Medicine in Italy\textsuperscript{8}, SMART Medicine Initiative in Israel, and, recently, Choosing Wisely in UK, France, Portugal, Romania and Poland. These societies published “top-five lists” of low-value medical interventions which should be avoided\textsuperscript{9-11}. These lists should be used to help make wise decisions in each clinical domain, by engaging patients in discussions about unnecessary tests, treatments and procedures. Multiple interventions and quality-measurement efforts are necessary to implement \textit{Less is More} recommendations. The purpose of this review is to explore the challenges to implementing this approach in European countries.
BARRIERS TO REDUCING OVERUSE

Eliminating unnecessary care and enhancing high-value care has received increasing attention from policy and health care systems. Compelling evidence reveals that some waste can be minimized. However, the simple awareness of these Top-5 Recommendations Lists are insufficient to change physician behaviours\textsuperscript{12}; other factors influence their practice, which is why these campaigns have only modest success\textsuperscript{13,14}. Several factors represent a barrier to implementing the \textit{less is more} approach (figure 1).\textsuperscript{15,16}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Drivers of overuse (adapted from ref\textsuperscript{15}), HTA= health technology assessment, EBM= evidence based medicine.}
\end{figure}
Patients’ expectations

For years, patients have been sold the idea that seeking medical care is the key to maintaining wellness, and that more medicine is preferable to less medicine.\(^\text{17}\) One study revealed that parents expectations regarding the prescription of drugs by pediatricians have a great influence on the effective prescription of antibiotics for children.\(^\text{18}\) Patients often do not understand that any diagnostic and therapeutic action in medicine may have unintended consequences and that good medicine does not necessarily mean taking action. There is an enthusiasm for early diagnosis as part of preventive strategy, as this allows patients to feel heard and reassured.\(^\text{19}\) However, negative consequences of false positive diagnostic tests are underestimated, and patients are quick to give doctors credit for trying to do something\(^\text{20}\).

In addition, patients have huge expectations of their expensive health care system, and often bristle at recommendations that seem to limit their choice: any attempt to limit the access to doctors might be interpreted in relation to its economic dimension, raising fears about “rationing.”\(^\text{21,22}\) Moreover, the principle Less is more is frequently counterintuitive, too (for both physicians and patients), and because of this it is psychologically hard to accept.

Physicians’ behaviour

Guidelines unawareness and overestimation of patients’ expectations by physicians are not factors which can explain entirely why physicians use low-value services\(^\text{23}\). Some tests are ordered out of fear of missing a diagnosis. Cognitive biases, such as anticipated regret for missing a diagnosis, and commission bias, or the tendency toward action rather than inaction, lead to performing more tests. This is particularly true in primary care, where the availability of diagnostic procedures is generally limited, contributing to diagnostic uncertainty and driving overuse even when there is no confirmed indication for an intervention. An analysis
of ambulatory practice shows that physicians seem reluctant to follow new recommendations when they are asked to refrain the interventions: the underuse of some evidence-based recommendations decreased, while the overuse of others that are no longer recommended remained stable. The fear of being sued for malpractice is of major importance, particularly in the US, where three-quarters of physicians report practicing defensive medicine, though defensive medicine is becoming more popular in Europe as well. In case of medical error, a physician who was exhaustive in patient care is less likely to be sued. Additionally, the fear of criticism from the patient or his relative for failing to pursue a test or treatment may at least partially explain defensive medicine. This raises the issue of how physicians can balance the growing focus on patient satisfaction scores with the drive for evidence-based medicine. In hospital medicine, a study revealed that the main reason for overuse in the evaluation of syncope was the desire to reassure patients and family members that they are receiving top-quality care. Entrance of hospital accreditation driven by accountability for resource use thus far only tended to inflate the problem, as hospitals invest large sums for the sole purpose of attaining the quality label that focusses on patient safety without stating need for responsible use of budget.

Some physicians are aware of the guidelines but disagree with the evidence and more broadly misunderstood the evidence-based medicine (EBM) approach. Conversely, some recommendations may rely upon biased studies or on experts opinion, thus far away from being “evidence-based.” A further challenge for academia and Internal Medicine scientific societies should be to teach and pursue critical appraisal of guidelines, to highlight the unbiased evidence and provide more practical tools for internist physicians. A recent study performed by the residents of the European Federation of Internal Medicine (EFIM) Summer School, comparing three major guidelines on atrial fibrillation management in an
acute setting, revealed that evidence on this particular clinical topic is largely based on expert opinion rather than clinical trials. While there is broad agreement on the management of the haemodynamically unstable patient and the use of drugs for rate-control strategy, there is less agreement on drug therapy for rhythm control and no agreement on several other clinical questions.\(^{37}\)

We believe that Internal Medicine societies, under the cover of EFIM, should take this challenge and create a task force to critically appraise the guidelines (http://www.agreetrust.org/agree-ii/) related to the most relevant diseases for internists, using tools such as AGREE II\(^{38}\). The Clinical Practice Guidelines Working Group of EFIM has been constituted lately to help in this process. On the other hand, we think that all *Less is more* recommendations should be appraised at their turn, and they should be backed by evidence and recommendation grading, like guidelines, because at first sight at least some of them do not have original research as references. Another question which arises is: a *less is more* recommendation not to use anymore an intervention should be issued only when there is evidence that the intervention is worthless, or even harmful, or it could be issued also in the case of lack of evidence that the intervention works?

A next step might be to take these critical appraisals to negotiate the formation of institutional practice standards: currently, hospital accreditation services (JCI and NHI) do not include standards concerning avoidance of medical overuse, and their focus on patient safety might even fuel the ongoing escalation of medical overuse to some extent.

**Patient and physician interaction**

The key mechanism for change lies in creating a shared decision-making process between physicians and patients during routine clinical encounters. Physicians are often
reluctant to speak about overdiagnosis. Most participants in a US cross-sectional online survey who underwent routine cancer screening reported that their physicians did not tell them about overdiagnosis and overtreatment\textsuperscript{38}. The few who received information about overtreatment had unrealistic beliefs about the extent of that risk\textsuperscript{39}. Physicians tend to convey their inaccurate risk perceptions to patients, leading to overstatements about treatment benefits and minimization of risks, in a phenomenon called “therapeutic illusion,” which may produce an unjustified enthusiasm for treatment\textsuperscript{40}. Both benefits and harms of action or inaction must be discussed in order to help make better decisions about clinical situations in which care is needed. Clinicians and patients must share the responsibility for the final decision, as both parties experience the potential consequences.\textsuperscript{41}

The whole Choosing Wisely campaign is patient-oriented and promotes shared decision making\textsuperscript{42}. That means using personalized assessments of potential benefits and harms, as well as considering the preferences of patients who are well informed about possible options. The interaction between patients and doctors must be strengthened because a good therapeutic relationship can cause the decrease of the unrealistic patient expectations which can cause overconsumption\textsuperscript{15}. The Choosing Wisely campaign can help educate patients and explain them why an unnecessary test may be harmful so that doctors and patients can have more constructive conversations about the tests.

**Lack of evidence and universal definition**

Sometimes, low-value care is obvious, as for an example shown in a US study that revealed that in 69\% of cases, women continued to have Pap smears despite a complete hysterectomy\textsuperscript{43}. However, there are many grey areas, situations with ill-defined boundaries, and overlapping benefits and harms. Unfortunately, the definition of value is not
straightforward and both value and costs depend on the perspective we take into consideration. We must consider that “cost” is different from “value”, and that cost includes cost of test and downstream costs, benefits and harms. For instance, high-cost interventions may provide good value because they are highly beneficial, and vice versa, low-cost interventions may have little or no value if they provide little benefit or increase downstream costs.

Despite Health Technologies Assessments (HTA), guidelines and other instruments, it is not always easy to determine which services are unnecessary. Sometimes it is just impossible as there is insufficient evidence to evaluate comparative benefit. There are many cases where an objective assessment is difficult or impossible not only because the priorities of the patient must be considered but also because the question arises of where to locate the boundaries of diagnostic and therapeutic utility. The value of a health care intervention is often defined as fitness for purpose, relating to its ability to meet stated needs. And these needs can be those of patients, providers, payers or families.

These controversies may explain why some countries, which are setting up stringent regulatory measures and trying to reimburse only medical interventions that are cost-effective, have experienced difficulties, such as what happened with NICE in the UK. Indeed, there is continuing debate about what constitutes reasonable cost for health care. It is important to evaluate and understand the value of medical services from the individual, medical and societal perspectives. If cost-containment strategies are unilaterally applied in order to reduce waste in clinical practice, health care leaders may have difficulty convincing frontline physicians to change their practices, leaving it up to individual health providers to determine what to do, on a case-by-case basis.
The challenge of Less is More medicine is to integrate value from all perspectives. In order to reduce overuse and maintain both physician engagement and public trust, it is necessary not to use cost as the motivating factor and rather focus on unnecessary tests that may be harmful. Less is more campaigns use standard definitions of inappropriateness, based on scientific evidence, such as top-five lists or the RAND Appropriateness Method (RAM), because these combine the best available scientific evidence with expert opinion. These definitions must be timely and evolve with the release of new evidence and discovery of new medical technologies. However, there is agreement that defining appropriateness is, to a large degree, a sociopolitical process, involving multiple players and preferences.

Lack of health services research and policy

In several European countries there has long been an imbalance between clinical research and health services research. Health care services research which is focused on process metrics has been neglected for a long time. Among different reasons, we can note the fragmentation of the political system (federalism, regionalism), the limited health policy leadership of the federal governments, direct democracy, corporativism and the legitimate advocacy of private interests, and the fragmentation of healthcare financing. Reducing unnecessary care requires the same attention to guideline development and performance measurement that was directed at reducing the underuse of effective and needed therapies. Indeed, reducing overuse has not been a real focus of the quality of care movement so far.

Health service researchers need an additional scientific basis to study overuse and to distinguish between low- and high-value care. The necessary tools must meet quality criteria such as transparency about scientific evidence. Determining if a patient received a procedure inappropriately requires a much more detailed set of clinical criteria than those that are
required for assessments of underuse. This may be very expensive and time consuming, and thus explain the lack of comparative efficacy studies on health services. Practical local guidelines should be developed, as in addition to the previously listed guidelines limitations, their applicability to elderly populations with many co-morbidities is limited.

**Fragmentation of care**

It has been confirmed that overuse is widespread and occurs across multiple specialties. For this reason, the Choosing Wisely campaign is notable as it initially included organizations in several medical specialties. In Europe, this enthusiasm is scattered between countries in which the program is not shared between societies, and only very few scientific societies have published a top-five list compared to others in which this interest has been shared by a greater number of scientific societies. Healthcare systems with strong primary care medicine often offer better quality care with lower costs, which is partly explained by better coordination and less fragmentation. But to have a global impact, additional societies must join the effort. Cautions must be taken in order to ensure that physicians are willing to make recommendations to improve healthcare, even if it conflicts with their own financial interest, which was not always the case in the US. Indeed, the services included on the Choosing Wisely lists varied widely in terms of their potential impact on care and spending. Furthermore, medical societies should focus on their own activity, and not name other specialties’ services as low-value.

There is a problem in Europe because it seems that nobody really feels responsible: there is no institution authorized or money provided to conduct the creation of these top-five
lists. The pharmaceutical industry is not interested, and insurance providers argue that they cannot financially support such activities.

**PERSPECTIVES**

Campaigns such as *Slow Medicine* in Italy, *smartermedicine* in Switzerland, SMART Medicine Initiative in Israel, Choosing Wisely in UK, and other countries are only the starting point. There is agreement that multiple interventions and quality-measurement efforts are necessary to widely implement *Less is More* recommendations, such as physician’s behaviour change with data feedback, financial incentives, patient education, communication training and systems interventions. These campaigns represent tremendous platforms for implementing original quality improvement programs that are key elements to change physician behaviour and patient attitude. *Less is more* medicine may be considered as a quality-oriented approach trying to distance itself from the financial aspect and to give its own definition of value, mostly based on effectiveness and safety as unifying concepts.

**Monitoring and data reporting using variability**

Measuring the impact of *Less is More* medicine is complex. A recent survey including primary care physicians across Switzerland and members of the society demonstrated that knowledge of *smartermedicine* is quite high (>60%). Among them, about 70% of physicians say they nearly always follow the recommendations. However, these data are based on self-reported questionnaires, and thus are prone to reporting bias. To date, we cannot measure whether physicians really follow the recommendations in their routine clinical practice. A major obstacle is the lack of systematic monitoring of practice, which is an essential procedure.
if you want to measure the real impact of the campaign. The top-five lists draw attention to low-value services, but they should be translated into measurable recommendations and valid quality indicators to assess their effect on behaviour changes.

Furthermore, there are multiple challenges in measuring progress in reducing overuse of unnecessary care. First, defining the appropriateness of a service is a difficult task as clinical circumstances are not included in administrative databases that are routinely used as metrics. An accepted way to identify whether there is overuse in medicine is to identify the variability in medical practice among practitioners\(^{49}\). Variability analyses can show significant differences that are warning signs of overuse and a strong quality indicator. Process standardization can dramatically decrease variability and can eventually improve performance\(^{49,50}\). Following the *Less is More* approach, process quality indicators are easier to fix than outcome indicators as this approach targets activities that clinicians control most directly. Furthermore, the case mix of studied populations has little importance when interpreting results, which avoids some bias and makes benchmarking between providers easier.

For this purpose, data measuring and reporting are essential. In the US, a recent study estimated the rate of inappropriate outpatient antibiotic prescription, using national registries and the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) for coding the diagnoses\(^{51}\). In addition to experts’ reviews, authors used regional variability as estimates of appropriate antibiotic prescriptions. These types of data are essential in order to give feedback to physicians. Indeed, another study confirmed that data reporting had a positive effect and reduced the level of inappropriate care. In that study, the use of accountable justification and peer comparison as behavioral interventions resulted in lower rates of inappropriate antibiotic prescribing for acute respiratory tract infections\(^{52}\).
Quality improvement programs show that the dissemination of guidelines on its own does not change physician behaviour, and compliance and accurate documentation remain suboptimal\textsuperscript{53}.

**Financial incentives**

European health care systems are different and may rely upon public, private, public- and private providers, with different effects on efficiency and quality. For instance, a health care system, such as the Swiss, Belgian and France based on a *fee-for-service* may provide excellent access to health care but with some pernicious incentives. Fee-for-service systems encourage procedure-based care rather than population-based patient management, which poses a challenge to the implementation of *Less is More* medicine. Paradoxically, payment is not based on indicators of quality and physicians are not rewarded when they limit the use of low-value services. On the other hand, healthcare systems based on physicians fixed fees (per-person fees, or fixed-based salaries), such as in Italy, Portugal, Romania, Poland (ambulatory practice) Iceland and Greece may discourage procedure-based care without, however, necessarily creating a positive drive towards a more appropriate access to care.

Transitioning physicians to a *performance-based* system may be a step towards restructuring the underlying incentives in health care in order to deliver high-value care. Physicians under this arrangement may be rewarded for meeting targets for delivery of health care services based on quality and efficiency. Linking low-value service use to financial penalties could speed change but may have a high risk of deterring physicians from participating in the program. Conversely, rewarding physicians for providing high-quality care and using only high-value interventions may be a solution. The reward could be financial or reputational through certification and labelling. The experience in the UK with a pay-for-
performance system revealed some improvement in process measures without a significant impact on mortality\textsuperscript{54}.

However, excessive links to incentives may trigger unintended consequences (such as risk selection) and major controversy and opposition, so caution is needed.\textsuperscript{55} Furthermore, in order to create a transparent and reliable process for rewards, we need reliable metrics, informatics and coding systems that are not yet available.

**Education**

Finally, there is a broad agreement that education plays a crucial role in disseminating *Less is More* medicine. Increasing knowledge about high-value care among residents and medical students has been associated with reducing inappropriate health care delivery.\textsuperscript{56} The *Less is More* philosophy should be taught early in medical school to train doctors to distinguish between high- and low-value care, and these concepts should be reinforced in the clinical practices learned during residency training. Evidence shows the durable impact of *Less is More* education. Physicians who were trained in high-spending regions tended to have higher mean spending compared with those who were trained in low-spending regions\textsuperscript{57}.

This underlines the importance of creating in all teaching hospitals a curriculum for educators and residents on *Less is More* medicine, similar to the American college of Physicians initiative on *high-value* medicine\textsuperscript{58}. Providing background evidence for decision making is a key strategy of instruction from the beginning of training, and faculty requires competency in defining low-value care and integrating the patient perspective. This should involve greater scrutiny of the methodology of evidence on which guidelines were founded, enabling doctors to detect where consensus statements leave the route towards true evidence-based and patient-centered practice. The amount of support for sustainable
practices within an institution and a performance-oriented culture may be critical to the successful training of these physicians. Continuing medical education in private practices, assisting physicians in carrying out their professional responsibilities more effectively and efficiently is also a key component.

**CONCLUSION AND FUTURE AGENDA**

There is substantial overuse of some common procedures that demonstrate no benefit and present potential harm in everyday practice. Compelling evidence based on several studies, and summarized in different practical guidelines, demonstrates that this waste can be minimized in our healthcare system. Cost-saving should not be the primary goal of *less is more* medicine, though it can be a collateral effect: the pressure to reduce costs is beneficial when it converges with the patient’s health interests and serves to improve medical quality, as part of a sustainable global economy.

EFIM has just launched a Choosing Wisely project involving twenty-five national societies of Internal Medicine. The aim of this project is, first of all, to stimulate the dissemination of the low-value, high-value care concepts and the top-five lists from participating countries; secondly, to start educational programs for physicians, educators, residents and students using practical courses and publications, and thirdly, to design research tools to evaluate the effects of Less is More approach on appropriateness of care and cost reduction. A crucial step to be developed in parallel with these three actions, will be the need to create a Guidelines Critical Appraisal Taskforce to assess the accountability of the evidence-based recommendations related to the most frequent diseases in the internal medicine clinical setting. We strongly believe that the increase in cultural awareness of overdiagnosis and overtreatment and the use of tools to detect it, is a fundamental step.
towards the development of a more appropriate medicine. The optimization of care rather than its maximization promoted by *Less is More* medicine can be an intellectual challenge but also a real opportunity to promote sustainable medicine.
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