

## OVERDIAGNOSIS: IT IS TIME TO DEMYSTIFY FALSE BELIEFS – A MEDICAL AND BIOETHICAL POINT OF VIEW<sup>1</sup>

### SOBREDIAGNÓSTICO: É HORA DE DESMISTIFICAR FALSAS CRENÇAS

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#### ABSTRACT

This paper proposes to discuss the excessive diagnostic exams (overdiagnosis) and its impact on the patient autonomy, beneficence, non-maleficence and on the sustainability, fairness and equity of the health systems. The authors provide a framework which shows that unnecessary exams can harm patients physically and psychologically, violating medicine's principles, and can damage health systems by wasting resources and diverting funds, not to mention a violation of Code of Medical Ethics and the increase of judicialization. The aim of this research is to demystify the beliefs that exams are always necessary to gain patient trust. The methodology is a literature review on bioethics, medicine and law. The conclusion is that overdiagnosis can result in further unnecessary treatments or interventions, causing stress to the patient and can also lead to overtreatment, violating medicine's first principle: "to do no harm".

**Keywords:** overdiagnosis. health's judicialization. preventive medicine

#### RESUMO

Este artigo propõe discutir os exames diagnósticos excessivos (overdiagnosis) e os impactos na autonomia do paciente, beneficência, não maleficência e na sustentabilidade, justiça e equidade dos sistemas de saúde. Os autores fornecem um panorama de que exames desnecessários podem prejudicar os pacientes física e psicologicamente, violando os princípios da medicina e podem

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<sup>1</sup> O tema foi apresentado na 16th Word Conference Bioethics Medical Ethics and Health Law e apenas o resumo foi publicado nos anais do evento.

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prejudicar os sistemas de saúde ao desperdiçar recursos e desviar fundos, sem mencionar a violação do Código de Ética Médica e o aumento da judicialização. O objetivo da pesquisa é desmistificar a crença de que os exames são sempre necessários para ganhar a confiança do paciente. A metodologia é uma revisão de literatura sobre bioética, medicina e direito. A conclusão é que o overdiagnosis pode resultar em mais tratamentos ou intervenções desnecessárias, causando estresse ao paciente e também pode levar ao excesso de tratamento, violando o primeiro princípio da medicina: "não causar dano".

**Palavras-chave:** sobrediagnóstico. judicialização da saúde. medicina preventiva

## 1. Introduction

Overdiagnosis is one of the most harmful and costly problems in modern health care today. Overdiagnosis (which is the excessive diagnostic exams) is the main consequence of a medicine based on technology, which aims to improve patient outcomes by detecting disease in the earliest form. By doing so, unnecessary exams can harm patients physically and psychologically (as it triggers the labeling effect). It is known that being labeled with a disease can have a negative impact on the well-being of the patient, increasing anxiety, changes in self-perception, focus on wrong things, etc.). It also can lead to overtreatment (that can lead to side effects complications and psychological stress), can violate ethical principles (specially “to do no harm”), can damage health system (causing an economic hardship) and can increase judicialization (the public and private health systems are overloaded and lawsuits continue to increase with requests for medication, tests, treatments, etc.)

“Overdiagnosis occurs when physicians make diagnoses in individuals who are not destined to ever develop symptoms – or die – from the condition diagnosed”. It is a side effect of people’s wish for finding disease early through annual checkups and screening.<sup>4</sup>

Summarizing, in a sentence, “the excessive diagnosis exams can harm patients by leading to overtreatment (with associated potential toxicities), diagnosis related anxiety or depression, by labeling, or through financial burden”.<sup>5</sup>

Excessive diagnostic exams draw away healthcare professional’s attention from caring about other health issues and generates costs to the whole health system.

Traditionally, a medical diagnosis is based on clinical symptoms and signs, and on a patient’s past medical history. However, in the Brazilian culture it is usual to do early medical checkups, under the false belief that diseases can be detected earlier.

The development of preventive medicine and the diagnostic technology, in a context of a predominance of chronic conditions pre-clinical phase, “have changed the diagnostic process, expanding the possibilities of interventions across asymptomatic individual and blurring the boundaries between health, risk and disease”.<sup>6</sup>

Although early detection of a disease has been shown to be beneficial for several conditions, it also increases the probability of finding insignificant abnormalities, whose treatment is not associated with any benefit and can harm the patient.

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<sup>4</sup>WELCH, H. Gilbert. Overdiagnosis: Bad for You, Good for Business SPH Bicknell lecturer says too much treatment makes people sick. Available at: <https://www.bu.edu/articles/2011/medical-overdiagnosis-bad-for-you-good-for-business>.

<sup>5</sup>KALE, Mina S, KORENSTEIN, Deborah. Overdiagnosis in primary care: framing the problem and finding solutions. *BMJ* 2018; 362 doi: <https://doi.org/10.1136/bmj.k2820>

<sup>6</sup>CHIOLERO, Arnaud et al. How to prevent overdiagnosis. *Swiss Medical Weekly*. 2015; 145: p. w14060 <https://smw.ch/index.php/smw/article/view/1972/2825>

There is no broad definition of overdiagnosis. The term can be traced back as far as 1955 and it means making people patients unnecessarily, by identifying problems that were never going to cause harm or by medicalizing ordinary life experiences through expanded definitions of diseases.<sup>7</sup> But here it is an important alert: it does not mean false-positive result, neither misdiagnosis nor diagnosis error. Those terms have a different significance and are not applied in this article.

This paper aims to discuss what are the reasons for unnecessary exams and who benefits from them, providing a framework that brings to a conclusion that overdiagnosis has a domino effect that leads to judicialization and to the higher cost of health system.

The authors intend to draw attention to the problem and sign a path to prevent it, based on an education that focus on the patient himself, on his autonomy and beneficence.

## 2. What are the reasons for overdiagnosis?

There are at least seven reasons for unnecessary exams. The most common one may be the professional insecurity issues. Physicians “fear of missing a diagnosis” and the fear of being sued for malpractice can cause a lack of confidence and harm the relation between patient and doctor. “The fear of litigation also exists because in some jurisdictions there is a risk of litigation when a test is not done, but not when a test is done, even if it results in the identification of indolent abnormalities”.<sup>8</sup>

There is also a lack of skills on the professionals. Nowadays, medical education is focused on technology rather than on patient’s symptoms. Preventive medicine can be named as another cause of more screening and technology use. And there are the financial incentives for physicians that can cause pressure from the pharmaceutical industry, pressure from the equipment industry, pressure from the hospital and even pressure from the patient himself (patient’s need for reassurance).

It is important to mention that there is also a false culture on believing that “more is better”. For instance, nearly half of patients expect a drug prescription when they visit a doctor's office. The blind beliefs in new technologies are factors that increase the demand for more testing, causing overdiagnosis.

But it is significant to demystify false beliefs: more care does not mean better care. It is scientifically proven that unneeded exams lead to a lot of treatment and make people sick.

Overutilization in the diagnostic procedure can be associated to the increased sensitivity of diagnostic testing<sup>9</sup>. Dr. John Cronan expresses his concerns about searching for non-palpable thyroid nodules with US (ultrasound) mainly because the technology permits detection of 2–3-

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<sup>7</sup> BRODERSEN, John et al. Overdiagnosis: what it is and what it ins't. *BMJ evidence-Based Medicine*, February 2021 volume 23 number 1

<sup>8</sup> CHIOLERO, Arnaud et al. How to prevent overdiagnosis. *Swiss Medical Weekly*. 2015; 145: w14060 <https://smw.ch/index.php/smw/article/view/1972/28>

<sup>9</sup> CRONAN, John J Thyroid Nodules: is it time to turn off the US machines? *Radiology*, volume 247, Number 3, June 2008 <https://mail.google.com/mail/u/0/?tab=rm&ogbl#inbox?projector=1>

mm nodules, and he asks himself “if should we maintain the chase?”. As in Ross, “considering the anxiety, costs, and complications suffered by many of these patients, one can reasonably question the benefits of increased cancer detection”.<sup>10</sup> These cancers would never have caused symptoms during life, increased diagnostic scrutiny is causing overdiagnosis. So, the question remaining: is it time to turn off the US (ultrasound) machines?

In 2010, some medical specialty societies from United States of America began asking their members to identify 5 tests and treatments that were overused and did not provide meaningful benefit for patients. Then, in 2012, the American Board of Internal Medical Foundation formally launched the Choosing Wisely campaign, focused on supporting conversations between patients and physicians. Not long afterwards, Choosing Wisely Canada created the “More is not always better” slogan. The goal of the campaign is to educate patients and the medical community about unnecessary diagnostic tests.<sup>11</sup>

Choosing Wisely explores ways to reduce overuse and unnecessary services and improve patient’s outcomes. It defined “top 5” lists of tests, treatments and procedures that may be unnecessary or unsupported by evidencing what tests, treatments and procedures are needed and which ones are not.

One Choosing Wisely’s item included by many specialties is the recommendation to avoid routinely performing preoperative testing (including chest radiography, echocardiography and cardiac stress tests) for patients undergoing low-risk surgery.

Choosing Wisely goes back to the core of essence of being a clinician: having conversations with the patients and so the doctors choose the proper care.

There are 4 questions patients should ask their physicians:

- Do I really need this test, treatment or procedure?
- What are the downsides?
- Are there simpler and safer options?
- What happens if I do nothing?

It is crucial to improve conversation between physicians and patients, to value the physical examination and to prescribe truly necessary exams and treatments. Usually, risks and benefits tend to be assessed in terms of general population instead of the individual patient. That is why is so important the existence of conversations and personalized care in the relation between the doctor and the patient. So that “more is better” changes into “this is what is best for me”.

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<sup>10</sup>CRONAN, John J. MD Thyroid Nodules: Is It Time to Turn Off the US Machines? *Radiology*, Volume 247, Number 3, June 2008, p. 602 – 603 <https://mail.google.com/mail/u/0/?tab=rm&ogbl#inbox?projector=1> Access: march, 2024

<sup>11</sup>Choosing Wisely Alberta aims to reduce unnecessary medical tests and treatments -CBC News Physician-led group targeting unwarranted diagnostic testing for headaches and vitamin D deficiency. Danielle Nerman - CBC News - Posted: Mar 08, 2016 12:33 PM EST | Last Updated: March 9, 2016 <https://www.cbc.ca/news/canada/calgary/choosing-wisely-alberta-medical-testing-1.3481064>

The physicians should assure their patients that the medical practice is supported by evidence. Lucas Chartier says that antibiotic overuse can cause allergies, rashes, diarrhea and antibiotic resistance. Medical imaging overuse, for example, can cause radiation exposure that increases lifetime risk of cancer.<sup>12</sup>

It can also be a huge waste of resources, time and money, for the hospitals, physicians and patients. “The goal of diagnostic testing is not to reduce diagnostic uncertainty to zero (an impossible task), but rather to optimize decision making by judicious use of diagnostic testing”.<sup>13</sup>

### 3. What are the goals of choosing wisely?

As previously mentioned, Choosing Wisely explores ways to reduce overuse, unnecessary services and improve patient’s outcomes.

The goals to achieve are listed bellow:

- Medicine supported by evidence
- Avoidance of unnecessary and untargeted diagnostic tests, and the avoidance of screening without demonstrated benefits
- No duplication of other tests or procedures already received
- Free from harm
- Avoid high costs
- Improve conversation between physician and patient

By doing so, Choosing Wisely respect the four commonly accepted principles of health care ethics: respect for autonomy, nonmaleficence, beneficence, and justice.

### 4. Who benefits from overdiagnosis?

There are a lot of people who benefits from overdiagnosis: pharma, device manufacturers, imaging centers and even local hospitals. H. Gilbert Welch says that the easiest way to make money is not to build a better drug or device, it’s to expand the market for existing drugs and devices by expanding the indication to include more patients. Similarly, for hospitals the easiest way to make money is not to deliver better care, it’s to recruit new patients – and screening is a great way to do this.<sup>14</sup>

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<sup>12</sup>More care does not mean better care (interview with Dr. Lucas Chartier) August 19, 2020. Talk in trash with UHN Canada’s #1 Hospital <https://talkintrashwithuhn.com/2020/08/19/more-care-does-not-mean-better-care-interview-with-dr-lucas-chartier/>

<sup>13</sup>National Academies of Sciences, Engineering, and Medicine. 2015. Improving diagnosis in health care. Washington, DC: The National Academies Press; 2015 Dec 29. [https://www.ncbi.nlm.nih.gov/books/NBK338596/pdf/Bookshelf\\_NBK338596.pdf](https://www.ncbi.nlm.nih.gov/books/NBK338596/pdf/Bookshelf_NBK338596.pdf) (e-Book) p. 92

<sup>14</sup>WELCH, H. Gilbert Overdiagnosis: Bad for You, Good for Business SPH Bicknell lecturer says too much treatment makes people sick Boston University Today. October 26, 2011. By Lisa Chedekel <https://www.bu.edu/articles/2011/medical-overdiagnosis-bad-for-you-good-for-business/>

## 5. Domino effect also includes judicialization

Recently, society is facing a growing phenomenon of the so called judicialization of health. The Constitution of the Federative Republic of Brazil of 1988 guarantees universal healthcare: *Health is a right of all and a duty of the state and shall be guaranteed by means of social and economic policies, aimed at reducing the risk of illness and other hazards and the universal and equal access to actions and services for its promotion, protection and recovery* (art. 196).<sup>15</sup> The effectiveness of this constitutional right must start from the doctor-patient relationship in the fulfillment of health plan contracts and, when patient's claim is judicialized, in the training of magistrates do decide properly (considering medical opinion and the patients individuality) and to encourage extrajudicial solutions.

There is one new lawsuit at every two minutes in Brazil<sup>16</sup>. Private health plans are sued for denial of medication, denial of exams, medical negligence, malpractice, etc. There are several reasons for that, but for sure, excessive diagnostic exams impact on the patient's autonomy, on the sustainability, fairness and equity of the public and the private health systems. Overdiagnosis can also impact negatively in the high cost of health plans and increase of judicialization.

It should be kept in mind that in places where medical care is too costly, the bill is payed by everyone.

## 6. How to prevent?

It is very important to prevent overdiagnosis from being an ordinary practice among medical professionals as it is nowadays.

First, it requires a great effort on education. Medical and Law schools should increase their *curricula*. They should focus on a curricular content about healthcare overuse and, instead of litigation, law schools should emphasize mediation, conciliation and other methods of extrajudicial solutions.

The conversation between the patient and the physician is also essential. More time spent listening to the patients' complaints and giving them information about their health increases the patient autonomy to decide which treatments are best for them.

Today, it seems that there is a lack of time for that. The medical appointments are short, and even shorter on public health system.

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<sup>15</sup> BRAZIL - FEDERAL SUPREME COURT Constitution of Federative Republic of Brazil 1988 [https://www.stf.jus.br/arquivo/cms/legislacaoConstituicao/anexo/brazil\\_federal\\_constitution.pdf](https://www.stf.jus.br/arquivo/cms/legislacaoConstituicao/anexo/brazil_federal_constitution.pdf)

<sup>16</sup>Uma nova ação a cada dois minutos contra os planos de saúde. Published in: 27/06/2024 Espaço vital independente (website dedicated to legal operators) <https://www.espacovital.com.br/noticias/uma-nova-acao-a-cada-dois-minutos-contra-os-planos-de-saude-27-06-2024>

In Germany, for example, the average is nine minutes per appointment. In the Netherlands it is already 15 and in Sweden around 29 minutes.<sup>17</sup>

Arnaud Chiolero and his colleagues state that “reducing overdiagnosis will likely require improved understanding of disease biology and progression, as well as increased awareness of its occurrence among health care professionals, patients, and their families”.<sup>18</sup>

## 7. Conclusion

In conclusion, overdiagnosis or unnecessary exams can be a huge waste of resource, time and money for the hospitals, physicians and patients. It is a side effect of the never-ending impulse to find disease early through annual checkups and screening.

Unneeded exams can lead to overtreatment violating medicine’s first principle: “to do no harm”.

Therefore, it is crucial to improve conversation between the doctor and the patient, and take a time to ensure the patient that new disease definitions are based on evidence, not financial interests. It is the core essence of being a physician.

It is also significant to secure patient that more care does not mean better care, and that too much treatment makes people sick.

By all accounts, overdiagnosis can be bad for the patient himself, but good for business.

Seems understood that it is time that medical professional responsibility requires evolving, if the treatments do more harm than good.

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