Health checks: A "Yes, Minister" parody also outside the UK

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In 2007, the Danish Association of the Pharmaceutical Industry had convinced politicians they had lobbied that regular health checks are useful for disease prevention. Surprisingly, when a journalist asked if it was more about selling drugs, the industry spokesman confirmed this.[1]

Some years later, I suggested to Lasse Krogsbøll to do a PhD on health checks, which he accepted.

We had studied 56 Danish websites selling health checks, with another student.[2] We found that 17 of the 21 most used tests were unjustified, and in some cases, there was evidence *against* using them for screening purposes. None of the websites mentioned any harms and they presented a median of only one of the 15 information items recommended by the WHO and the Danish Board of Health when screening healthy people.

Health checks, called annual physicals in the USA, are like car checks. They detect many things that should not be treated because they are either insignificant or will disappear again. In contrast to cars, our body has a remarkable capacity for self-healing. Like health checks, car checks result in large bills for unnecessary interventions. A friend of mine never had his old Volvo checked - he got it repaired when there was a problem, which saved him a lot of money. I do the same. I only see a mechanic when I have a reason for it or for simple issues such as changing oil.

We did not expect to find much but there were 14 trials with relevant outcome data that had compared health checks with no health checks in adults unselected for diseases or risk factors. We published our review in 2012[3] and updated it in 2019.[4] There was no reduction in total mortality (risk ratio 1.00), cardiovascular mortality (risk ratio 1.05), or cancer mortality (risk ratio 1.01). With 21,535 deaths, our results are very convincing.

There were no benefits either for clinical events, hospital admissions, or other measures of morbidity, but there were harms. More people got a disease label, and more became treated with antihypertensive drugs. We concluded cautiously that "General health checks are unlikely to be beneficial," but in fact they are harmful.

In 2011, when our new government had regular health checks on the menu, I asked to have a meeting with the Minister of Health, Astrid Krag. I told her that our review, which we had just completed but not yet published, found no effect on mortality. I took a colleague to the meeting, Torben Jørgensen, who told Krag about a large trial he had just finished, which also failed to find an effect.[5] The director of the Board of Health, Else Smith, participated in the meeting, but a few years later, when she was still the director, the Board manipulated the science beyond belief (see below).

We told Krag that health checks are probably harmful, leading to more diagnoses, more drugs, more adverse effects, and psychological problems because people are told they are less healthy than they think. She aborted her plans and said it was the first time the new government had broken a pre-election promise in an evidence-based manner.

Our review saved billions for Danish taxpayers. But when people draw conclusions without doing their homework, terrible mistakes can be made. One such case involved statistician Bjørn Lomborg who denied the existence of climate change in his book, *The sceptical environmentalist*, which is filled with selective quotations of data that speak against global warming and omits supportive data from the same sources.[6] Lomborg arranged the Copenhagen Consensus Conference in 2011 where three health economists concluded that health checks would give the most health for the investment, 26 crowns for every crown invested.[7] Quite an impressive gain for something that doesn't work.

We explained the elementary errors behind this estimate.[8] It came from the smallest of the trials we had included in our review, the Danish Ebeltoft study. It contributed only 0.4% of the weight in our meta-analysis of mortality in our most recent update.

The economists calculated the number of life years gained based on an extrapolation from changes in risk factors, which is a wrong approach. Moreover, a review of 55 trials with interventions against elevated risk factors had not found less morbidity or mortality in healthy people.[9] Finally, it is very bad science to cherry-pick a single, tiny trial.

The UK government didn't care about the evidence. The National Health Service offered universal health checks for people between 40 and 74 years of age who were tested for cardiovascular disease, diabetes, and chronic kidney disease.

A slide show claimed that annual health checks would prevent at least 9,500 heart attacks and strokes, 2,000 deaths and 4,000 people from developing diabetes. There was a graveyard at sunset, so that no one would miss the gravity of what would happen if they did not attend health checks.


THE TIMES

The woman behind that M&S campaign

NHS checks on over-40s condemned as 'useless'

Call for £300 million scheme to be scrapped

Name, set and match to Miss Sugarpova

When our review came out, a Department of Health representative told *BBC* that, "By spotting people who are at risk of heart attacks, diabetes, stroke and kidney disease, we can help prevent them. The NHS Health Check program is based on expert guidance."

I see. The UK programme was based on evidence until our review showed it didn't work. Then, out of a sudden, the programme was based on "expert guidance" instead.

Once something has been introduced as a national priority, it is very difficult to stop it. With a British understatement, the reactions in the UK to our review were "interesting."

A year later, we had had enough of all the nonsense and published a letter in *The Times*,[10] which resulted in a front-page interview with Lasse: *NHS checks on over-forties condemned as useless*. It covered almost half a page - next to a large photo of Prince William, his wife and child, and a royal dog.

In response to repeated calls for the programme to be scrapped, Public Health England announced that an expert panel was to be established to review the effectiveness and value-for-money of NHS Health Checks.[11]

Ministers now insisted that 650 lives a year could be saved[12] - a sharp retreat from the previous claim of 2,000. The chief executive of Diabetes UK, Barbara Young, said that routine checks could uncover 850,000 people with undiagnosed type 2 diabetes. However, labelling almost a million healthy people as diseased has no value in itself, and we had found that screening for diabetes is not helpful.

The attempts at finding a fig leaf and continue with the programme were now so bizarre that I wrote in the *BMJ*:[13]

"Public Health England will establish an expert panel to review the effectiveness and value for money of NHS Health Checks, and it will refresh the economic modelling behind the programme. We are furthermore told that 'although we recognise that the programme is not supported by direct randomised controlled trial evidence, there is nonetheless an urgent need to tackle the growing burden of disease which is associated with lifestyle behaviours and choices.' The truth, that health checks don't work and are likely harmful, is too much to bear for Public Health England, it seems. An expert panel is the modern version of the Oracle in Delphi, and statistical modelling is like whispering in a wizard's ear which result you would like to hear. Saying that there is an urgent need to tackle the growing burden of disease as an excuse for going against clear evidence from randomised trials reminds me of another episode of *Yes, Minister* where it was skilfully argued why a huge number of administrators were needed for a hospital that had no patients ... Like health checks, mammography screening is harmful, but such trifles don't affect the leaders of the NHS or the UK Government."

A month later, we published a letter in the *BMJ* about the lack of fair play.[14] The NHS Diabetes and Kidney Care and the Department of Health had issued an eBulletin, *Response to the Cochrane review*, on the NHS Health Check programme's website, but what appeared to be serious criticism of our work was unfounded and seriously misleading.[15] We were even

told it was inappropriate that we had included unpublished mortality data from a UK trial. This critique showed a disturbingly poor understanding of the fundamental principles for systematic reviews. Searching for and including unpublished outcome data is very important, as negative results are less often published than positive ones.[16]

We wrote to the director of the NHS Diabetes and Kidney Care and asked for our reply to be published on their website, which was declined. We were told that the government had already decided that "NHS Health Checks will be carried out as a national priority;" that the website is not a forum for debating the merits of such checks; and that "there are other more appropriate places to discuss government policy."

Since the website was not a forum for debating the merits of health checks, we wondered why the NHS had done exactly that, yet still denied us the opportunity to respond. And why the NHS programme did not publish its criticism in *BMJ*, where we had published our review, so we could respond to it. The answer is obvious: The NHS preferred censorship for an enriching debate, which they knew they would lose.

The absolute low point came five months later when the National Institute for Health and Care Excellence (NICE), supposedly an independent institution, behaved as the lapdog for the NHS and the drug industry. NICE issued a press release:[17]

"Helping local authorities to encourage people to attend NHS Health Checks and support them in making changes needed to improve their health, is the focus of a new NICE briefing ... providing the best value for money ... A report from Public Health England found that checking blood pressure, cholesterol, weight and lifestyle of people in this age group could identify problems earlier and prevent 650 deaths, 1600 heart attacks and 4000 diagnoses of diabetes a year ... The NHS Health Check programme is currently part of the health delivery infrastructure in England, so NICE seeks to support its effective delivery."

Prevent 4000 diagnoses of diabetes a year? Diabetes UK had just claimed that routine checks could uncover an estimated 850,000 people with undiagnosed type 2 diabetes. How does that add up? Are we supposed to find 850,000 or to avoid finding 4000?

One of my UK colleagues called the press release "Stalinism in the NHS" and referred to an article showing that members of Parliament were not as gullible as NICE.[18] They singled out NHS Health Checks as a cause for concern in a highly critical report, which noted that health professionals had been pressured to refrain from criticising the project in public. Regarding the poor uptake (only about 50% attended), Public Health England said its aim was to drive the acceptance rate up to 70-75%. That would not be possible without misinforming the public even more than before.

Despite all the *Yes, Minister* manoeuvres, people paid attention to our review and the media interest was phenomenal. Many websites, even in the USA - the motherland of overdiagnosis and overtreatment and waste of money - questioned health checks.

One of the poorest arguments I have often been exposed to when a systematic review shows that something doesn't work, is to criticise the included trials or the methods of the review, as if this would somehow render a negative result positive.[19]

Torsten Lauritzen, key spokesperson for the tiny Ebeltoft study, wouldn't give up. His arguments were all false, e.g. that our screening tests and treatments were outdated and that the trials were old (we included all trials, also the newest ones).[20] He referred to a meta-analysis of surrogate outcomes and to retrospective non-randomised comparisons, and talked about modelling studies, which are the standard "rescue" when results from randomised trials go against popular beliefs.

Lauritzen was amazingly stubborn.[21] He carried on with his wishful thinking that health checks reduce mortality using modelling based on risk factors. He mentioned a systematic review of trials in general practice showing an effect of screening on risk factors for cardio-vascular disease but failed to note that it also showed that 30% more people died from cardiovascular disease in the screened group than in the control group! As this difference was statistically significant, Lauritzen was scientifically dishonest.

He continued propagating misleading comments about our research and published a *State of the Art* article in our medical journal, which I would call a *State of the Garbage* article.[22] He only mentioned his own study and an irrelevant diabetes trial that was not about health checks. This was cherry-picking in the extreme.

Lauritzen had many competitors to the Fool's Prize in this area, and one of them was our Minister of Health, Nick Hækkerup. He admitted to a speaker on health in Parliament that our review had not found any effect of health checks but added that the Board of Health had stated that this did not rule out that other forms of health checks could have an effect.

I noted that philosopher Bertrand Russell had pointed out how meaningless such state-ments are.[23] He said we cannot rule out that there is a porcelain tea set in orbit circulating around the Earth. Scientifically, we cannot rule out that something might exist. But is it likely that there are UFOs or Martians, or a tea set in orbit? There was a cartoon in my article that was spot on. The man with the phone is from the European Space Agency and he says:

“It is from the Danish Board of Health. They ask what it would cost to launch a porcelain tea set for 12 into orbit?”

The Board of Health gave the minister a counterfactual fig leaf, which, according to my dictionary, belongs to the "department for nonsense.” It rings hollow when the Board calls itself the country's supreme authority on health while it engages in politicisation at a nonsense level.

I asked the Board to get access to the documents, 30 in all, but was not allowed to see any of them.[24] At the same time, a feature article in a newspaper criticised that civil servants did not hold on to "legality, matter-of-factness, professionalism and truth,” but manipulated the evidence to embellish the government's image and advance its interests.

I complained to the ministry and got access to 14 documents, which included a smoking gun. It was about screening for chronic obstructive pulmonary disease, cardiovascular disease and diabetes, and it stated that early detection can lead to fewer disease complications, reduce mortality, reduce healthcare costs, and provide opportunities for a better life, improve the quality of life, and even stop the development of the disease.

This mendacious information came from our Board of Health! I therefore asked for access to the remaining 16 documents, which should not be a problem according to our law because the case was now closed.

The Board’s reply was another smoking gun: Access to the documents would mean that the Board’s professional advice could limit the minister's political range of manoeuvres; it could also limit the civil service's freedom in relation to professional advice, which could lead to deterioration of the professional advice the minister receives from civil service. Thus, there are very special needs for confidentiality, the Board argued.

I had never before seen such an admission that the “professional advice” is unprofessional. One would expect the opposite, that people would tighten up if there was public insight into what they did. And if the professional advice is okay, the Board should be proud of it and have nothing against putting it on public display. If you have nothing to hide, then hide nothing.

And yet, there was a third smoking gun: The ministry referred to a document which "was exchanged between the ministry and the Board of Health in several different versions, which reflected the ongoing development in the work with “qualifying the initiative to introduce health checks.”

What? This is what the Americans call torturing your data till they confess.[25]

I complained to the Parliamentary Ombudsman who supported me. After a year, I got access to the document, which was the fourth smoking gun. It referred to the Ebeltoft study and stated that health checks had a positive effect for men with a short education, which was a lie. In our review, we had included a WHO study with 60,000 male factory workers

and 2511 deaths, and there was no effect. In the Ebeltoft study, there were only 92 deaths, and those with short education made up a minor part of these.

Then came smoking gun number five. The Board of Health discussed our review in a very cursory, almost condescending way: "Various studies show that general health checks have no effect on health (among them studies from Glostrup Hospital and the Nordic Cochrane Centre)." Various studies? We had collected *all* the studies!

The government had announced that it would cooperate with "central actors in the health service" to clarify who would benefit from health checks. I strongly doubted that those of us who knew most about the matter and had provided the most reliable evidence would be consulted, and I was right. The Board only asked the Ebeltoft people for advice.

I wondered what the documents I had not seen contained. Were they even worse? Would that be possible considering the Machiavellian process I had already uncovered?

Hækkerup was very pleased that the Danish Society for General Practice had offered to assist with the work, but this was also incorrect. Only the chairman had announced this and several of the members called for his resignation because of it.

The Danish Society of Public Health wrote to the government and Parliament that they wondered why the government, despite massive knowledge of the lack of effect of health checks, had made a decision that was very costly and would mean that cuts had to be made elsewhere in the healthcare system.

Hækkerup was grilled in the media. He declared he was convinced that people would live longer. When a journalist pointed out that there was no evidence for this, Hækkerup replied that he was not a scientist but a politician. The journalist then said that he must rely on science: "Nah, I am an opinionated person," he replied. Imagine if the Minister of Transport had a fondness for bamboo and decided that the Fehmarn Bridge to Germany should be built of bamboo, with a remark that he was an opinionated person, not an engineer.

What should we do when ministers of health and civil servants distort the scientific evidence to an unbelievable degree and harm our citizens and our economy? I wrote that the new law about reduced public access to government documents introduced in Denmark in January 2014 was heavily criticised for undermining democracy and increasing the risk of abuse of power in the public administration.[26]

I firmly believe that when our authorities comply with the whims and gut feelings, ministers and conflicted experts have, instead of being truthful to science, we must change our laws about openness in public administration and introduce stiff penalties for those who abuse their power, including ministers.

Hækkerup had talked to three renovation workers and asked them if they thought health checks would be a good idea. That was the positive evidence he had. When he announced this, he also said the men could pleasure their wives. Indeed, a minister for the people.

Hækkerup, a social democrat, succeeded to convince the government about introducing health checks to "vulnerable citizens." Luckily, we got a new government in 2015, a liberal one, which cancelled his foolish plan.[27]

In 2014, *BMJ* asked us to write an article about health checks.[28] It is counter-intuitive that health checks don't work, and we noted that it has been documented that even brief counselling about smoking will make some people abandon their habit, and that several of the trials we included advised the participants about this and other unhealthy lifestyles.

There are two likely explanations for the lack of effect. Many physicians already advise their patients and test for cardiovascular risk factors or diseases in patients whom they judge to be at risk when they see them for other reasons. Further, beneficial effects of screening could be outweighed by harmful ones, and type 2 diabetes is a good example. Our drug regulators approve diabetes drugs solely on the basis of their glucose lowering effect without knowing what they do to patients, although we now know that several drugs in widespread use, e.g. tolbutamide and rosiglitazone, increase cardiovascular mortality.[29]

Our review did not include trials of geriatric screening, as they evaluated many other interventions in addition to screening, such as falls prevention and specialist drug review. A large meta-analysis showed that community-based multifactorial interventions significantly increased the chance of living at home and reduced falls and hospital admissions.[30]

Thus, there might be niches where interventions could work, but these interventions are not health checks. We therefore called for stopping health checks.

But Lauritzen had a political project. In 2017, a UK observational study had shown that more diagnoses were made when people attended health checks, and he advocated a similar study in Denmark.[31]

Many people who view themselves as scientists behave as pseudoscientists because they try to reject strong evidence with weak evidence, which is about not losing power or face. The research literature, newspapers, and other media are full of such UFO tricks. If you use a fuzzy photo to "prove" you have seen a UFO when a photo taken with a strong lens has clearly shown that the object is an airplane, you are a cheat. Many people believe the UFO tricks because they don't have a science education, and many that have one are unable to distinguish between good and bad science.

Observational studies are the commonest cause of harmful confusion. When randomised trials have shown something with great certainty that people with vested interests don't like but cannot refute, they often say that observational studies have arrived at the opposite result and then discard the trial evidence.

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