Some fragments of the health economy and the associated ethics issues in times of COVID-19

George Perendia, PhD ©

Summary:

I am taking an interdisciplinary approach to the ethical issues of triage, medical research, the QALY measures and the cost-benefit decisions economics issues in relation to the potential side effects of their application.

DISCLAIMER: For start I need to clarify that I am not a bio-medical or a medical specialists but primarily an economist with information analysis, econometrics and social science backgrounds and once, an academic researcher in those fields. I thus can not claim to make any judgement on the validity of below discussed medical research. During my undergraduate studies, I however also had courses in psychology (including clinical) and philosophy, both of which I used in my further academic research. My approach here is to provide a personal reflection, mainly from health economics, and, the ethical philosophical perspectives.

Some fragments of the health economy and the associated ethics issues in times of COVID-19

Introduction

The interdisciplinary approach to the problem comes from three main viewpoints onto its complexity.

These points are namely economics, taken in its widest possible sense, medicine and the research, specifically the medical one, and that of the philosophical ethics and morality.

This research, I would argue, falls into category of so-called applied ethics as it may cause both, some controversies as well as moral concerns.

Some fragments of the health economy and the associated ethics issues in times of COVID-19

Ethics vs Morals

- For start, in sense of distinction between the ethics and morals (?):
- Philosophy generally does not make big difference between the two forms
- but outside its domain the
- morals are considered brought in through more natural, early influences of one's family and close social circles including religious upbringing. It is often source of ideological biases.
- The ethics is mostly considered to be developed in a more positive and, I would add, cognitive manner, through wider social accordance and subsequent training.

I would argue that

- many of these rules stem from, or are a base to, the initial social contract,
- are often developed further into more formal conceptual forms of social, civil or a variety of state laws.
- (e.g. for a basic see: https://www.youtube.com/watch?v=fAkqh9pfVkc).

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Ethics vs Morals (cont.)

However, for example, text “L' Ethique et la morale” by Paul Ricoeur (1990), takes an apparently opposite stance that is more based in tradition and that associated ethics as a more personal belief (in the sense of Aristotle) and, also asserts, ethics being a word of Greek origin as opposed to a similar word of Latin origin - moral – this as socially given norm in the sense of Kant (who himself may have used that term as more familiar one.

- On the other hand, both Kant and Ricoeur are, in my view, correct to identify morals as socially predisposed too, though,
- I would argue, those stem from one's early exposure to, e.g., family, tribal and/or religious etc. values embed quite deeply into our psyche.
- However, the neuropsychology of early learning is beyond this study,
- And I will, for now, take the earlier approach.
- i.e. we are not concentrating on meta-ethics (the “metaphysics” or ontology of ethics) but its application in the domains of medical economics and in context of the main ethic schools: utilitarianism vs. Rawls-ean and Lockean liberalism.

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Medicine and Ethics

- None of those modern classics wrote particularly on health and
- not even a late 20th C. social philosopher Rawls wanted to get into the then very ticklish subject in the US such as public healthcare and ethics,

- Along the lines of the early liberalist philosophers, e.g. John Locke,
- Rawls positions health as a given natural primary good (right) but one on which a society has no impact.

- However, I argue many forms an aspects of health may be treated in a similar manner as natural endowment in property and,

- I can however then argue that liberalist failed to see that, their society should nevertheless, as a part of the protective social contract, the one humans engage in for protecting private property and physical security, also provide protection for health security as another public good.

Some fragments of the health economy and the associated ethics issues in times of COVID-19

Medicine and Ethics (cont)

That is,

- it should help any of those naturally left vulnerable to give them as equal liberty of choice at their start what Rawls argued for education.

- Also, some social roles (like long work in mines and steel plants) or air pollution may influence negatively the health of those exposed, and then,

- the society has a responsibility or even benefit in protecting the affected.

- In that sense that some forms of health protection should become one of the public goods along the lines of police and military defence.
- i.e. it was mainly European countries who, having suffered medieval and early 20th C. plagues as well as cholera and the so-called Spanish flu,
- learned them the importance of at least anti-epidemic defences.

Some fragments of the health economy and the associated ethics issues in times of COVID-19

Medicine and Ethics (cont)

However, this does not necessarily imply a raison-d'être for a fully featured public health services for all possible diseases.

- For those individual diseases falling within Rawl's sense of natural endowment in health-good as given biologically and not socially conditioned, a different approach may be taken from
- those professional and environmental health issues affecting larger population.
- From a liberal economic point of view, such states of diseases may be seen as state contingent and adequate securities may be put in place to be claimed in case they occur.
- A few author tried to expand Rawls' theories on the field of health (See the links just below).
- In fact, as I would argue, in the view of his social justice theory, his position (or a lack of one) may put his work in a very different light.

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Medicine and Ethics (cont)

In this text I will assume extensions to the Rawls' theory in the sense that many argue that should have been done:

- **Healthcare is another primary, public good, and**

- **Health of an individual or a group:**

- **can be affected by their own and wider social actions and conditions, and,**
- **can be seen as additional measure in a manner similar as one's material welfare: it is insatiable but with diminishing health-fare utility.**

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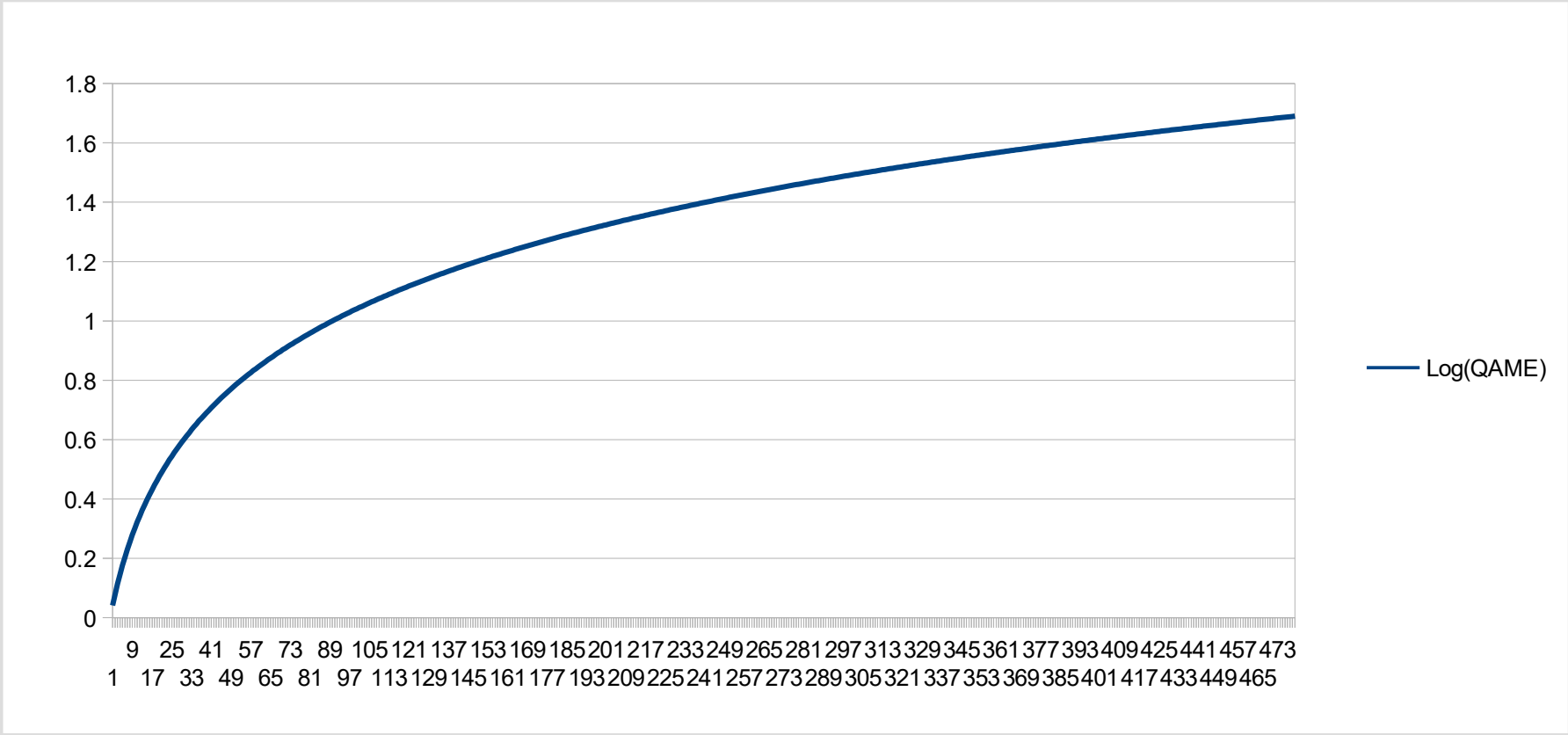
Medicine and Ethics (cont)



Sample welfare / health-fare (well-being) diminishing utility using ln(n) model.

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COVID-19 Handling:

To take a closer example.

- Both Sweden and the mainland EU followed advices of the "best" solution given by their immunologists in reacting to the COVID-19 pandemic, however, much they were very different.
- The former, was more of a laissez-faire type, or “do as you think suits you best” without formal pressure for confinement and isolation,
- the other, much more strict in its isolation, social distancing, shop and restaurant closure and confinement rules and their enforcement.
- At this date, Sweden counts its dead from COVID-19 per-capita similar to the average of other EU countries,
- thus, more than its first neighbours that, so far evaded those numbers.
- This is not to say that Sweden did or will do much worse, and, the delayed effect of the post-isolation in those countries that imposed it, may give even more similar results.
- The main difference may however be that the Swedish economy did not stall and suffer as much as those of the other EU countries.

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COVID-19 Handling:

- It is however not always clear if the scientists just provided a set of scenarios and that it was politicians who, guided by those scenarios, made decisions, or

- if it was ultimately the scientist who made the recommendations, or gave advice that was followed and put in action by the means of governments.

- But, in either case, it was a moral position of the person(s) who made decision about the path to follow that was at least in part influential, even if the person(s) in question was(were) unaware of those priming influences, sometimes, acting subliminally or semi-suppressed from the conscious mind.

- Sometimes such positions may become assimilated as apart of the non-questionable axiomatic starting ground for a research.

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COVID-19 Handling:

COVID-19 Handling differed more in the beginning and one can argue that

- many, Far Eastern and then, though a bit late, mainly most affected western EU countries took to strict measures and lockdowns.

- **Ethics assessment(?):**

- It can be argued that those countries that imposed stricter measures aiming to protect their most vulnerable members acted in mostly consequentially- utilitarian manner imposing reduction of the activities and welfare to many other “better-off” health-wise.

- Thus less so in line with Rawls' distributive justice for health.

Some fragments of the health economy and the associated ethics issues in times of COVID-19

Research: Is there a moral or an ideological bias behind the science and the research?

- Throughout of my professional career (and outside of it) I have been involved, either directly but often indirectly, in many of scientific research studies, in their analysis or in their studies.

- This covered many of very different, disparate scientific disciplines, from, social-sciences (e.g. sociology, archaeology, anthropology and economics, linguistics) to human (psychology, psycho-linguistics) but also, those hi-tech/physicals ones (computer sciences, telecommunications and electronics).

- Regardless of the science, each time I encountered more or less open, certain levels of political, ideological or simply moral biases that question traditional objectivity of science or, how it is, at least, being widely presented.

Some fragments of the health economy and the associated ethics issues in times of COVID-19

Research: Is there a moral or an ideological bias behind the science and the research?

- My experience, and that of many other resonate very much in line with opinions of, e.g. Robert Nadeau (1983), outlined in his short text "L'épistémologie comme idéologie". ("Epistemology as Ideology").

- **One may then say, ..The levels of bias and its openness may vary:**

1) they were so hidden that even the scientists expressing opinions were not even aware that their statements are, at end of the day, biased by their deep political or moral presumptions, so deeply embedded in their psyche that they became unquestionable and unobservable starting points, assumptions, or, sometimes, axioms, that they mostly assumed to be universally shared (or if not, than sufficiently superior to any others) that they need not be even mentioned or exposed to any questioning or discussion.

Some fragments of the health economy and the associated ethics issues in times of COVID-19

Research: Is there a moral or an ideological bias behind the science and the research?

- **One may say, ..The levels of bias and its openness vary:**

- **2)** Sometimes it is more intentional though still hidden from the public eye.
- For an example, when archaeologists and linguists work hard to establish an autocthonity and uniqueness of a particular ancient or more recent culture and so help the current (or any would-be) state to re-assert or establish some historical lineage and legitimacy for its location through claims of continuity of its unique identity,
- only to be, more recently, very often contradicted if not denied by different types of modern genetic analysis.

- **On this subject, see also, work of** Robert Nadeau (1983): "L'épistémologie comme idéologie"; Université du Québec à Montréal

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- **Research: Is there a moral or an ideological bias behind the science and the research?**

Modern Constructive Empiricism seeks predictive and actionable models, not necessary the whole truth behind.

- Such pragmatic approach may switch:
- from lengthy (and expensive) psychoanalytical treatment that spends a lot of time to figure the true root causes of a psychosis,
- to treating it regardless, or with less concern with the true cause but within more pragmatic behaviouristic and cognitive therapy methods.
- This is actually not unlike the so-called "primitive science" (Levi-Strauss):
- e.g. shaman medicines, which, in fact, often resulted from generations long empirical observations and trans-generational transfer of practical, functional knowledge about healing herbs or procedures without knowing the true root cause, e.g. a bacteria or a virus, then invisible for the so-called "primitive" scientist.
- However, whether the cause is the virus or a bad spirit as they may believed, it did not matter, as long as we had a working medicine.

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Research: Is there a moral limit on the science and the research?

Bodies of research:

- A story of Burke&Hare - when I heard their names it sounded familiar - I had lived next to the pub named to celebrate them - a party of the Edinburghshire black humour mood …

- But This is something happening in South America now ...

- To help anatomy, Leonardo da Vinci and many other artists made their own or shared with others and doctors, the autopsies .... even against the laws of their countries ...

Some fragments of the health economy and the associated ethics issues in times of COVID-19

Research: Is there a moral limit on the science and the research?

Live Testing

- - pure testing and evaluating medicines, vaccines, they must, possibly, be tested on humans or their close genetic relatives.
- But which men / women or cousins?
- The suicides of animals in the test trials have shown us that the people are more conscious than instinctive.
- Q?: Are people willing to take the risks, for money or for nutrition or other reasons?
- Testing In the tertiary world, as the big companies are already doing?
- In the concentration camps the German doctors, of which Mengele is the most notorious, performed many such tests.
- But also, in American hospitals, in the 1970s, brain bisections were performed to prevent epilepsy strikes, but, several other behavioural effects are documented and are still being studied and discussed.

Some fragments of the health economy and the associated ethics issues in times of COVID-19

Economics: Who will pay for research and use, and, is it optimal?
How to measure (economic) efficiency of a treatment?

- **QALY:** A Number of full well-being quality adjusted life years that a treatment provides, or QALY,
- It is a most commonly used measure of the in assessing the effectiveness (health benefits) of a medical treatment , usually the cost-effectiveness,
- It was originally introduced gradually in late 60s and early 70s by a group of the US and UK based specialists, e.g. Klarman, Francis and Rosenthal. , (1968) gave a bais whilst Zeckhauser and Shepard, (1976), were first who defined the actual term QALY).

- **QALE** - a similar, Number of life capacity quality adjusted life expectancy

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Economics: Who will pay for research and use, and, is it optimal?

How to measure (economic) efficiency of a treatment?

QALY:

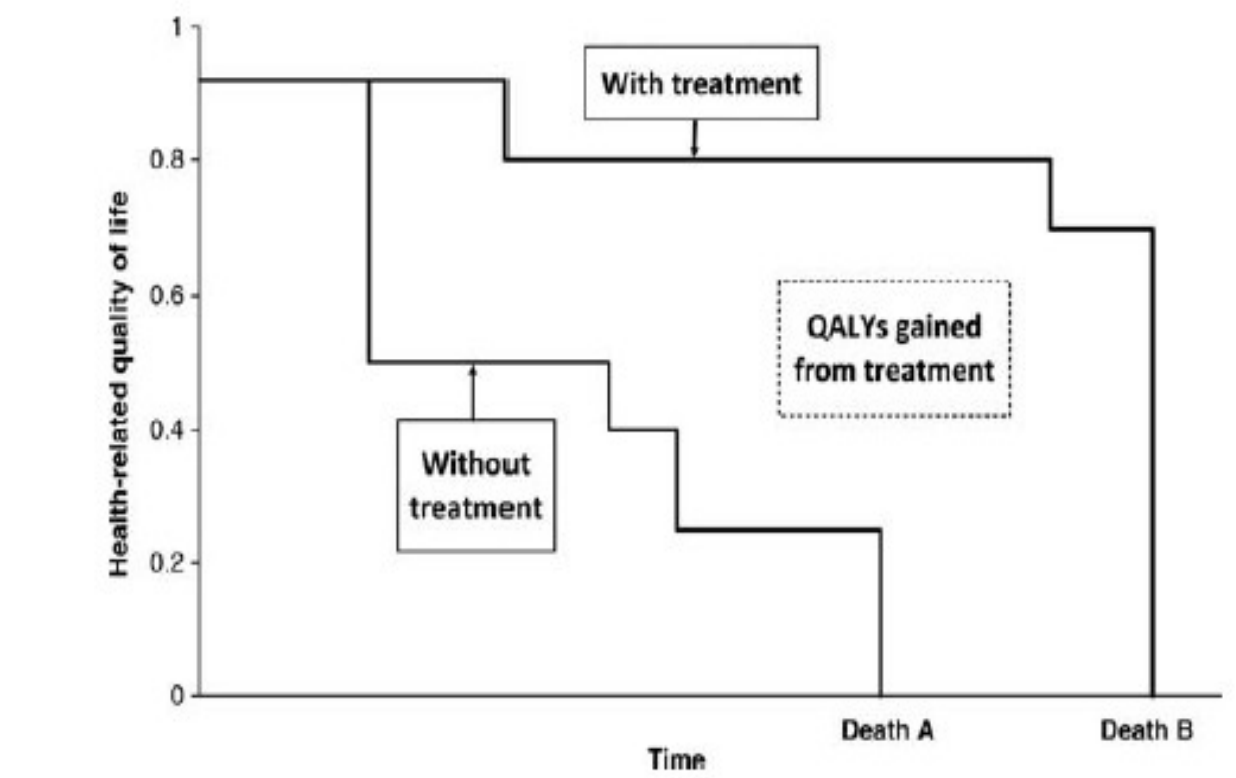

Fig. 1 QALYs gained from treatment.

(Figure 2 reproduced from Whitehead and Shehzad , 2010)

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Economics: Who will pay for research and use, and, is it optimal?

For example, according to another background paper, one by Fanshel and Bush (1970), the Pan American Health Organisation PAHO came up with illness prioritisation equation (reproduced from Fanshel and Bush, 1970):

$$P = MIV/C,$$

where

P = priority, or relative importance, of the disease.

M = incidence of deaths due to the disease, as a ratio to over-all deaths.

I = product of the number of deaths resulting from the disease, and an arbitrary coefficient that is age dependent.

V = vulnerability of the disease, i.e., probability of causing less deaths because of health program intervention, as determined by medical and health professionals.

C = cost of the health-program activity.

- Indicating that an illnesses with higher costs of treatment (C) and/or smaller treatment effectiveness (V), will be prioritised at a lower rank of importance with, e.g. same (or regardless of) incidence of deaths (M*I).

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Economics: Who will pay for research and use, and, is it optimal?

How to measure (economic) efficiency of a treatment?

- **QALY:** Having that, the above ratio V/C translates well, as an inverse, to later established cost effectiveness ratio (CER) also referred to as cost-effectiveness analysis (CEA):

CER = C/QALY

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Economics: Who will pay for research and use, and, is it optimal?
How to measure (economic) efficiency of a treatment?

A nowadays commonly used measure introduced by University of York researchers, the Incremental CER, or ICER ratio as the incremental cost per quality-adjusted life year (QALY) gained:

$$\mathbf{ICER = (C_1 - C_0)/(E_1 - E_0)}$$

.

where $C_1 - C_0$ is incremental cost and $E_1 - E_0$ beneficial effect gained usually measured in QALY differential and which loosely means an effective cost of any saved quality-adjusted life year (QALY).

Some researchers and health bodies prefer to use an inverse of QALY, the
•DALY (disability-adjusted life-year) or, a related measure is
•QALE - quality-adjusted life-expectancy.

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Economics: Who will pay for research and use, and, is it optimal?

How to measure (economic) efficiency of a treatment: ICER

- E.g. in a very simple sample, between two treatments for same problem (or even two different problems), A and B, with CER or ICER of A being measured to be lower that that of B, I.e.:

  ICER (or CER) A < ICER (or CER) B

- I.e. A cost less per QALY provided and the treatment A is chosen over B.
- Or, in an inverse, A givers more QALYs for an unit of investment into the treatment.
- That is, the inverse of either, CEA/CER or ICER works in a manner similar to return (calculated in QALYs) on capital invested, being higher for A.

- So far so good, almost a “no-brainer” from financial-economic point of view one cold say.

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- **Economics: Who will pay for research and use, and, is it optimal?**
  How to measure (economic) efficiency of a treatment: QALY and QALE:

- One need to emphasise that QALY (and related QALE etc.) is (are) not used only when efficiency ratios of
- a capital investments for facilities or
- a research are measured against .
- In daily operations, process of so-called triage (sorting and ordering), the prioritization of the cases, e.g:
- A triage nurse need to decide whether to put a patient A or B into the only remaining ICU bed..., or,
- Similarly many doctors e.g. in Italy, have had on a daily basis to decide whether to put a younger (and higher QALE) respiratory tract affected COVID-19 patient or an elderly one on the single remaining inhalator (with an additional concern that for the elderly, the invasive treatment itself may be equally if not more damaging).

Some fragments of the health economy and the associated ethics issues in times of COVID-19

Economics: Who will pay for research and use, and, is it optimal?

How to measure (economic) efficiency of a treatment: QALY and QALE:

- A surgeon (or an AI based decision support system) may need to decide who to prioritise for a same heart op first:
- an older smoker (patient A) with life expectancy (QALE) is only 5 years, or,
- e.g. a younger and healthier heart patient with life expectancy (QALE) of 25 years (patient B):

Patient	No-op QALE	Post Action QALE gain:	total QALE	relative well-being gain (%)	ln relative gain
A	1.00	5.00	6.00	500	0.78
B	1.00	25.00	26.00	2500	1.41

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Economics: Who will pay for research and use, and, is it optimal?

Problems with CEA and ICER using QALY (or, QALE or DALY):

- When choosing between two different treatments for same illness and same population of patients, no major problems occur.
- However, few scientists identified problems with QALY (and related, similar) measures when a choice between treatment for different illnesses and populations groups are made using QALY and CER/ICER.
- Some that I would like to raise here are some that I and a few others have identified.

For a start:

- all three, the QALY and related CER/ICER use an absolute measure of Quality-adjusted life years increment and that could be a problem.
- This leads to QALY reflecting only social /financial cost versus the absolute measure of efficiency but/and
- not the actual individual's health and well-being utility benefit efficiency.

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Economics: Who will pay for research and use, and, is it optimal?

How to measure (economic) efficiency of a treatment: QALY and QALE:

- f we assume (as above) the diminishing, upward-concave health (well-being) utility, in a few simplified examples:
- A person A and B :

Patient	No-op QALE	Post Action QALE gain:	total QALE	relative well-being gain (%)	ln relative gain
A	5.00	5.00	10.00	100	0.3
B	20.00	5.00	25.00	25	0.1

QALY/QALE gives measure with preference towards less sick and those with higher longevity, therefore, an utilitarian solution more than individual-libertarian , one can argue, therefore contrary to the principles of the rights of humanity.!

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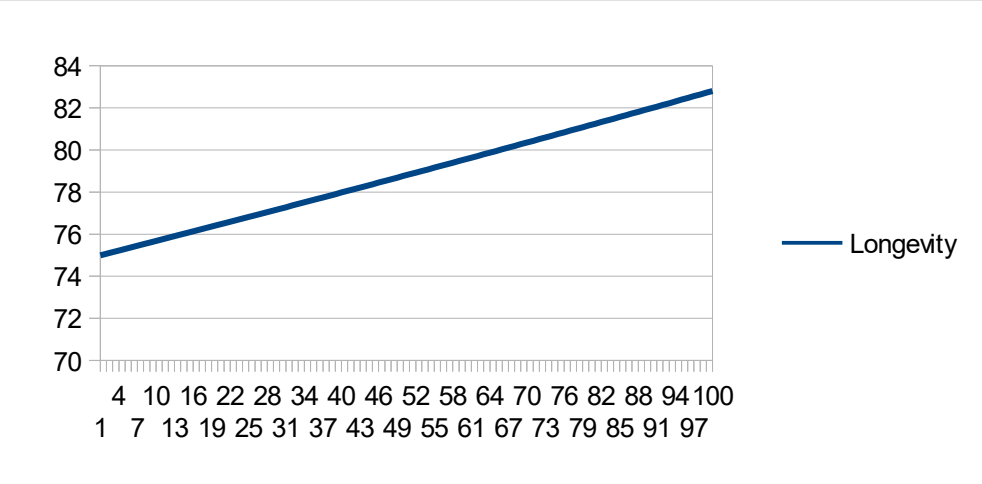
Economics: Who will pay for research and use, and, is it optimal?

Problems with CEA and ICER using QALY (or, QALE or DALY):

2) It also is social-engineering, that is to say, increases the longevity of these already predisposed to be living longer against those less so , again, contrary to the principles of equality of options:



- e.g. with just 0.01% rise per year, slowly but still exponential rise from 75 to 83y can be achieved in about 100 years. However slow differentiation is, can such form of discrimination really be morally justified for different groups?

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Economics: Who will pay for research and use, and, is it optimal?

Problems with CEA and ICER using QALY (or, QALE or DALY):

- 3) in both cases it is both, the individual and the social sum of individual relative gains the well-being "yield on capital investment" , that is higher if the more vulnerable ,(the least-off) shorter QALE (poorer health-fare) person A s helped first (instead).
-
- This is to say that QALE may have been giving an advantage for treatments to those "better-off" i.e. with a longer QALE to start with
- and discriminating against the "poorer" ones and that
- the relative utility gain measure on its own may be a more adequate, measure that would give a more even playing field in terms of personal utilities and just rights and liberties of choice between the two groups.

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Economics: Who will pay for research and use, and, is it optimal?

Problems with CEA and ICER using QALY (or, QALE or DALY):

- However,whilst this above solution may be or may not be acceptable to the social consequential utilitarians, depending on the weights,
- it is unlikely to be acceptable for Rawlseans:

- As A. Sen argues, the main difference between consequentialist utilitarian and approach is that in Rawls' notion of being just such benefit in favour of poorer needs to be contributing benefit to benefit across the board,
- or, at least, for the one at whose account the less-off is benefiting the redistributed the goods.
- For example, a further existence of the worse-off person needs to be of sufficient importance either for the person at loss, or wider society,
- so that loosing person may benefit in some way from such sacrifice or altruism.

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Economics: Who will pay for research and use, and, is it optimal?

Problems with CEA and ICER using QALY (or, QALE or DALY):

- **Window length:** If one considers cost-efficiency comparison, the time window plays important role:

- E.g. whilst plan A may be more cost-efficient, e.g. less costly QALY,
- it may require extension or even expansion over the prolonged period bypassing in its costs the plan B though
- Plan B has higher cost in short-term but drops to small or 0 in short time.

- E.g. A psychotherapy may seem to be more expensive that treatment by opioids in the window of 3-5 years,
- but, it may resolve the underlying problem and help patient live normal or almost normal life after 3 years
- whilst one on opioids may need increasingly more of them in time, or,
- even additional hospitalisation and intervention in time to come.

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"Alternative News"- Distraction, Obstruction and Agnotology

- Not a new phenomena that came with COVID.
- For business/economic reasons, we have had several times heavy investments into counter-science, that is , funding medical research that will counter the main academic findings, e.g.:
- Tobacco as cancerogenic factor in 1970s
- Toxic effects of pollution and Pesticides on humans, insects and bees,
- Football and Chronic traumatic encephalopathy (CTE), and,
- more generally speaking, the alternative views on Human-caused Climatic changes nowadays,

- https://www.youtube.com/watch?v=6IGVqsnxCE0
- https://en.wikipedia.org/wiki/Agnotology

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https://scholarship.claremont.edu/cgi/viewcontent.cgi?article=1544&context=cmc_theses

Agnotology:

- Arte (in French): https://www.youtube.com/watch?v=6IGVqsnxCE0
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Thank you for listening!

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