



Zorginstituut Nederland

Equity considerations in practice of Dutch health care institute

Sylvia Vijgen
Floor van Heesch
Maja Obradovic
Joost Enzing
Jacqueline Zwaap

September 16th



ZIN and equity considerations

- Safeguard the accessibility, affordability and quality of the insured package.
- If we want to retain solidarity between the old and the young, and between the sick and the healthy, then people must feel that the funds are being spent equitably.
- A link exists between this solidarity and the available budget.
- We advise the Minister of VWS which care should be insured collectively.
- Based on our mission that all citizens have access to high quality care.

No more and no less than is necessary

Goal: fair distribution of payed premiums

What is fair?

As many health gains for the public as possible (value for money)?

Reduce inequities in health between people?

Pioritise those who are "worst off" ?

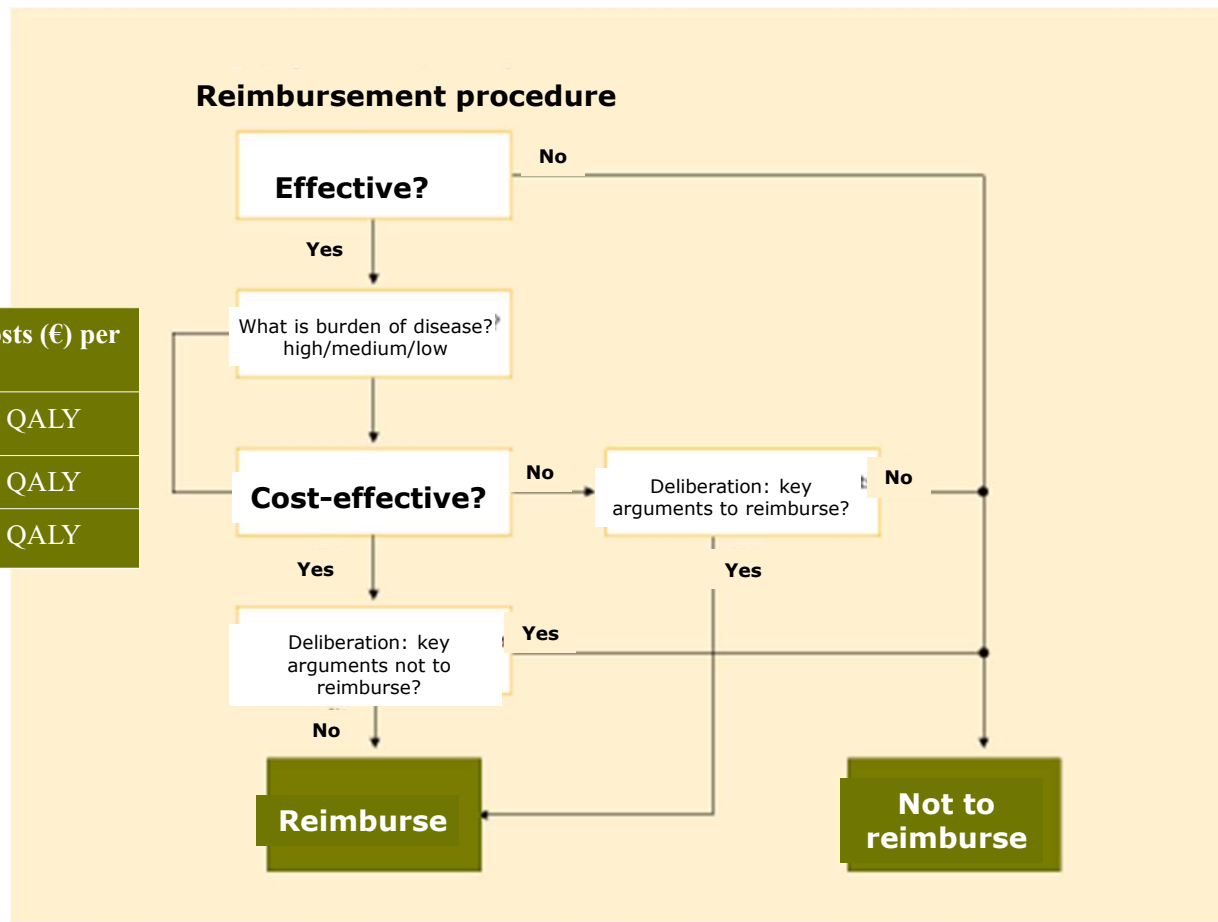


ZIN and reimbursement decisions

- To determine what care belongs in the basic health care insurance, we seek answers to the following questions:
 1. Is an important health problem involved? (**necessity**)
 2. Does treatment exist that can solve this problem? (effectiveness)
 3. Are the treatment's effects reasonably in balance with the costs? (**cost-effectiveness**)
 4. Are the costs of treatment beyond the reach of the patient, but within the reach of society? (feasibility)



Burden of disease	Acceptable costs (€) per QALY
0,1 - 0,4	< € 20.000 per QALY
0,41 - 0,7	< € 50.000 per QALY
0,71 - 1.0	< € 80.000 per QALY





The role of disease burden within decisionmaking

- For two criteria the burden of disease is an important aspect:
 - Necessity: is an important health problem involved? How severe is the disease?
 - Cost-effectiveness: we assume that society is willing to pay more costs per QALY for treating patients with more severe diseases than patients with mild diseases
- Society feels giving priority to patients with the poorest health is justifiable when making decisions on the reimbursement of their treatment.



Burden of disease in practice, 2018

- The Advisory Committee (ACP): How is burden of disease determined?
- Aim of the report: provide more insight in the determination of burden of disease and the reasons for choices made by us.
- Based on the following questions:
 - Which justification approach did we adopt in determining burden of disease?
 - And how is it quantified?
- As part of a larger series of reports: *stand van de wetenschap en praktijk, KE in de praktijk, Pakketadvies in de praktijk*



What is the relationship with cost-effectiveness

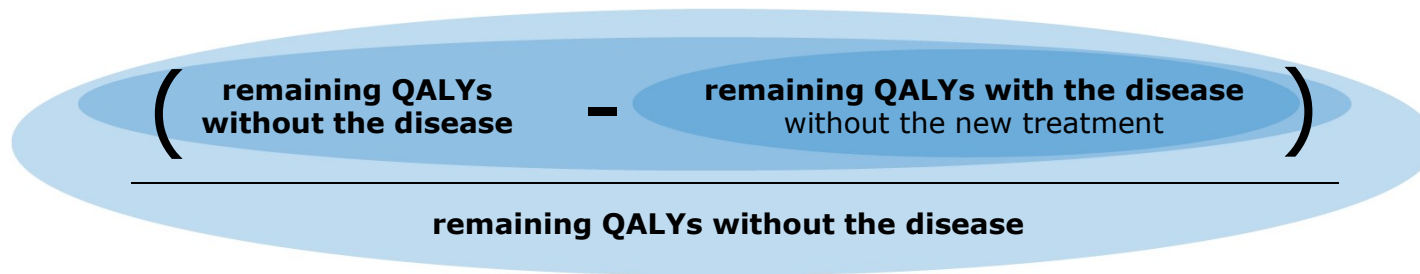
Reference values that vary according to burden of disease

Burden of disease additional costs (€) per QALY	Reference value for the maximum
From 0,1 up to 0,4	up to 20.000 euro
From 0,41 up to 0,7	Up to 50.000 euro
From 0,71 up to 1,0	Up to 80.000 euro



How is disease burden defined?

- The amount of health that patients lose on average during a normal lifetime as a consequence of disease > in statistics as a “relative loss of health”.
- As a result of disease, people can lose health in terms of future life-years and quality of life (absolute shortfall) > against the future QALYs of a person without the disease = proportional loss of life-years and quality of life (proportional shortfall).
- This gives us a decimal figure between 0.0 (no loss due to disease) and 1.0 (total loss of all future life-years and quality of life).
- This proportional shortfall method was developed together with iBMG/iMTA



- *Proportional shortfall* (treatments in the last phase of life are given a relatively high priority)
- *Absolute shortfall* as surrogate for *fair innings* (young people are given a relatively high priority)
- *Rule of rescue* (patients who need help now, to prevent their death, are given priority)



Quantifying disease burden = making choices

Choices in:

- What is an honest approach in priority setting: young people above older people? Emphasize health in the past?
- How do we want to quantify? Relative versus absolute?
- In our report we tried to explain and outset the choices we made



Question 1: Equity perceptions for priority setting

- **Fair innings:** for equity in life-long health for various individuals > the need for care increases as absolute loss of health increases
- **Rule of rescue:** gives the highest priority to people in the most acute life-threatening situations > urgency.
- **Prospective health:** for equity in future health.
Priority is given to people with the poorest health expectation, irrespective of their state of health in the past.

So: Which years of a persons life are important in the quantification of the severity of a disease?



Question 2: Methods to quantify

Two methods to quantify disease burden regardless the chosen equity perception:

- Relative measure: **proportional** shortfall (PS) – lost years due to the disease related to the years without the disease (age has no role)
- Absolute measure: **absolute** shortfall (AS) – number of years without the disease minus number of years with the disease (age has a role)



The choices we made (1)

- We realize that various opinions exist regarding equity.
- We still choose the proportional shortfall method because it holds an intermediate position and should be seen as a compromise between the 'fair innings' and the 'rule of rescue' methods.
- Society has no unequivocal preference regarding what is most 'honest' or 'fair'
- If in the future society proves to prefer a different approach, clearly, we will reconsider this choice.



The choices we made (2)

- To be as transparent as possible: also report on the individual elements of the proportional shortfall calculation
- Shedding light on the separate components from which burden of disease is comprised.
- The total number of quality-adjusted life-years a patient loses, and whether a disease leads to mortality in the short term.
- Look at two extreme cases to see what the consequences are of choosing this method



Fictitious example case 1*: a young patient

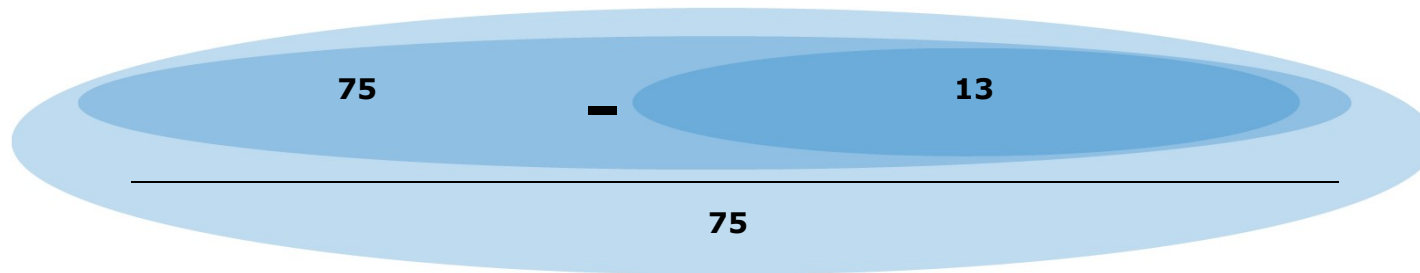
An **10 year old person** with disease X without treatment has a life expectancy of 20 years and a quality of life of 0,65 per year:

- Remaining QALYs with disease= 13 ($20 \times 0,65$)
- Remaining QALYs without the disease= 75 ($85 - 10$)

* Extreme case because large QALY loss in young people is exceptional



Fictitious example case 1



Proportional shortfall = 0,83

Absolute shortfall as surrogate for fair innings = 62 QALYs lost

Rule of rescue = 13 QALYs (patients who need help now, to prevent their death, are given priority)



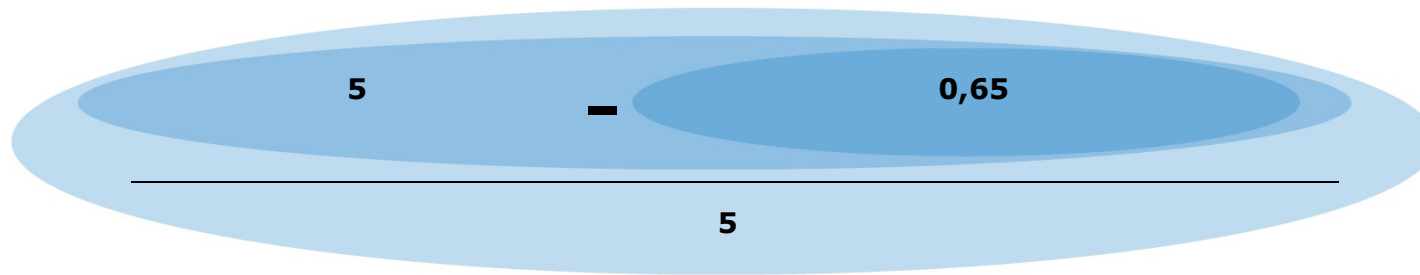
Fictitious example case 2: an older patient

An **80 year old person** with disease Y without treatment has a life expectancy of 1 year and a quality of life of 0,65 per year:

- Remaining QALYs with disease= $0,65 (1 * 0,65)$
- Remaining QALYs without the disease= $5 (85 - 80)$



Fictitious example case 2



Proportional shortfall = 0,87

Absolute shortfall as surrogate for fair innings = 4,35 QALYs lost

Rule of rescue = 0,65 QALYs



Results burden of disease of two extreme cases:

Case	Proportional shortfall	Absolute shortfall (fair innings)	Rule of rescue
Case 1: young patient	0,83	62 QALYs lost	13 remaining QALYs to live
Case 2: older patient	0,87	4,35 QALYs lost	0,65 remaining QALYs to live



A step by step plan

Five steps:

- 1) Accurate description of the indication
 - 2) Identifying the components of burden of disease
 - 3) Points that need consideration
 - 4) Determining point estimates and its uncertainties
-
- 1) Contextualising for the societal debate that takes place in the ACP



An example: medicine for heart failure

Indication: adults with chronic heart failure.

- Patients live 6,6 QALYs with heart failure but without medicine (from CE model)
- An average age of 67 years (as found in the clinical trial studie).
- Life expectancy is 15,3 QALYs without heart failure (source WHO and iDBC tool Versteegh)

Disease burden = $(15,3 - 6,6) / 15,3 = 0,57$

Absolute calculation: 8,7 QALYs lost because of the disease



Determining point estimates and its uncertainties

- Point estimate > linked to the cost-effectiveness analysis (uncertainties about used model, input data and assumptions)
- Uncertainty also exists when determining burden of disease
- Recently the iDBC tool of Versteegh et al. was updated with a method based on the uncertainties surrounding burden of disease point estimates: within ZIN discussion if and how to use this in the decision-making process



Conclusions ZIN report *Ziektelast in de praktijk*

- Continue to use proportional shortfall method to determine disease burden for reimbursement decisions
- The most important addition: report on the elements that make up proportional shortfall > also deduce the other principles of equity, such as 'fair innings' and 'rule of rescue'
- We are answering the question – transparently and fairly – of whether an important health problem is involved
- ZIN will follow all the new research that is done in this developing area > and maybe update the report and methods if necessary/proven



Thank you for your attention

Questions?

<https://www.zorginstituutnederland.nl/publicaties/rapport/2018/05/07/ziektelast-in-de-praktijk>