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## Reducing inequalities in what?

1. The recent Norwegian debate on priority setting guidelines
2. A diagrammatic exposition of the differences between equality criteria

Jan Abel Olsen

[jan.abel.olsen@uit.no](mailto:jan.abel.olsen@uit.no)

University of Tromsø, Norway  
and  
Norwegian Institute of Public Health  
and  
Centre for Health Economics, Monash University, Melbourne, Aus



## What I'm up to

- Context: Norway and our NHS
- The Norwegian priority setting debate
  - The discourse on severity and equality
- Science illustrated
  - A diagrammatic exposition of 5 equality criteria
- In conclusion, my view:
  - Reduce inequalities in lifetime health
    - as caused by inequalities in opportunities

## Norway

- Small & rich
  - 5 million, sparsely populated
  - GDP/capita: Third highest
- Generous welfare state
  - Social insurance (100% sick pay first year), parental leave, subsidised kindergartens
  - THE/capita: Second highest

## The Norwegian Health Service

- Funding
  - 85% tax-based
  - 15% private (patient payments + minor PHI)
- Specialist care
  - National/federal level
    - 4 regional health authorities
  - Mainly public hospitals
  - Block grants + activity based (DRG)
- Primary care
  - Municipality level
  - Mainly private independent GPs
  - 2/3 FFS + 1/3 capitation
- Political challenges
  - Integration between care levels
  - Priority setting

## Government appointed commissions on health care priority criteria

- 1987: Severity
- 1997: Severity, effectiveness, cost-effectiveness
  - Very influential report
  - Patient rights law
  - Clinical guidelines
- 2013-14: Revise and/or suggest new criteria

### The 1997 criteria

- Severity
  - A vaguely described term including everything
    - Prognosis; inferior health state, expected remaining life
    - Burden of disease; life years lost and ill health
- Effectiveness
  - Documentation
  - Health gains; increased lifetime and improved health state
    - No suggestion as to how it should be measured
- Cost-effectiveness
  - ‘Costs should be acceptable in relation to outcome’
    - No mentioning of a C/E threshold

### ‘The Norheim-commission’

7 men + 7 women  
7 MDs + 7 non-MDs

OFN	Professor of medical ethics (Chairman)	MD
RF	Professor of medical ethics	MD
AK	Professor of health law	Law
HAM	Professor of health economics	Econ
JAO	Professor of health economics	Econ
TG	Patient organisation representatives (mental health)	Nurse
BA	Patient organisation representatives (diabetes)	Teacher
SK	Hospital CEO/Professor	MD
ØM	Deputy Director, The Norwegian Directorate of Health	MD
AM	Medical specialist (paediatrician)	MD
BA	General practitioner	MD
MK	Immigrant representative	MD
SIS	Previous MP (Conservative party)	Midwife
GKJ	Previous MP (Labour party)	Law

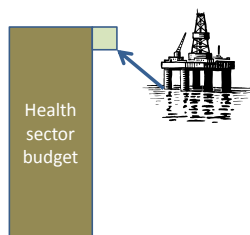
### The recommended criteria

- 1) Health gains
  - More health gains, is always better
- 2) Resources
  - Less resource use, is always better
- 3) Health losses
  - More lifetime health losses, is always worse

### Why health gains?

- Intrinsic value
  - Improved health has value in itself
- Instrumental value
  - The ‘wider social impacts’
- Measured by ‘healthy life years’

### Why resources?



**Perception:**  
‘The richest country in the world should not need to prioritise health care’



**Reality:**  
A given health sector budget  
→ New programmes displace existing ones  
→ Opportunity costs = benefits forgone

## Criteria 1 & 2 = Efficiency

- Cost-effectiveness
  - Health gains = Effectiveness
  - Resources = Costs
- Efficiency as health maximization
- Criterion 3: Equality, *but of what?*

## The recommended criteria

- 1) Health gains
  - More health gains, is always better
- 2) Resources
  - Less resource use, is always better
- 3) Health losses
  - More lifetime health losses, is always *worse*
    - *The larger your lifetime health losses, the higher your priority*

## New expert group

- In response to a critique of our *lifetime health loss* criterion, the Ministry appointed an expert group to consider alternative *measures for 'disease severity'*
- The *Magnussen-group* discussed various alternatives, and concluded in favour of *absolute shortfall*

## Reducing inequalities in what?

The 4 alternatives discussed by the *Magnussen-group*

1. Prospective health
  - Expected remaining health (prognosis)
2. Absolute shortfall (prospective health loss)
  - Burden-of-disease
3. Relative shortfall
  - The proportion of expected remaining health that is lost
4. Lifetime health loss
  - *Retrospective + Prospective health losses*

## Reducing inequalities in what?

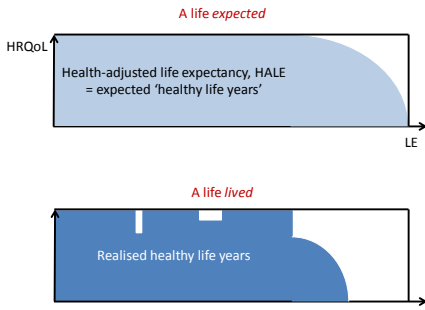
The 5 alternatives

1. Prospective health
  - Expected remaining health (prognosis)
2. Absolute shortfall (prospective health loss)
  - Burden-of-disease
3. Relative shortfall
  - The proportion of expected remaining health that is lost
4. Lifetime health loss
  - *Retrospective + Prospective health losses*
5. **Lifetime health**
  - *Retrospective + Prospective health*

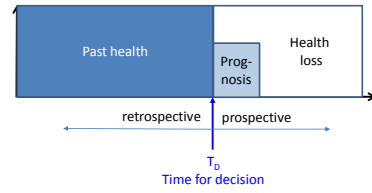
So then, in which ways do the 5 differ?

A diagrammatic exposition

An *expected life* is 'disturbed' by disease events over the course of a *life lived*



HALE = Past health + Prognosis + Health loss



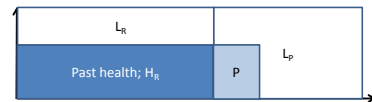
Including retrospective losses



- 1) Prognosis (end-of-life): P
- 2) Absolute shortfall: L<sub>p</sub>
- 3) Relative shortfall: L<sub>p</sub> / (P + L<sub>p</sub>)
- 4) Lifetime health loss: L<sub>R</sub> + L<sub>p</sub>

Including retrospective losses – and retrospective health

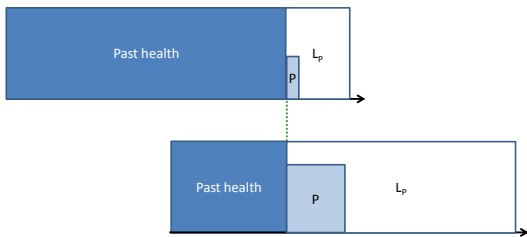
HALE = H<sub>R</sub> + L<sub>R</sub> + P + L<sub>p</sub>



- 1) Prognosis (end-of-life): P
- 2) Absolute shortfall: L<sub>p</sub>
- 3) Relative shortfall: L<sub>p</sub> / (P + L<sub>p</sub>)
- 4) Lifetime health loss: L<sub>R</sub> + L<sub>p</sub>
- 5) Lifetime health: H<sub>R</sub> + P

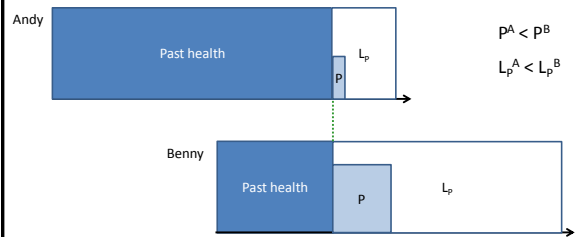
1) Prognosis vs 2) Absolute shortfall

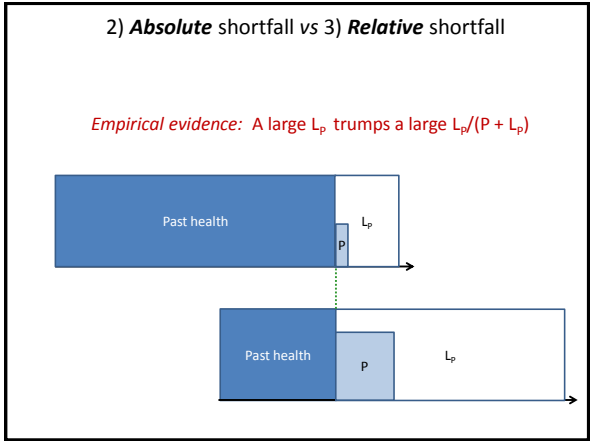
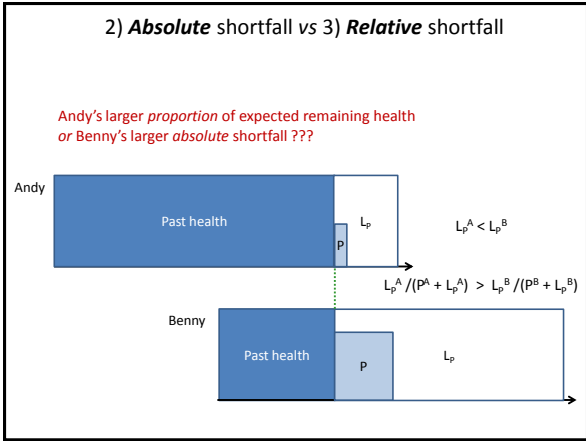
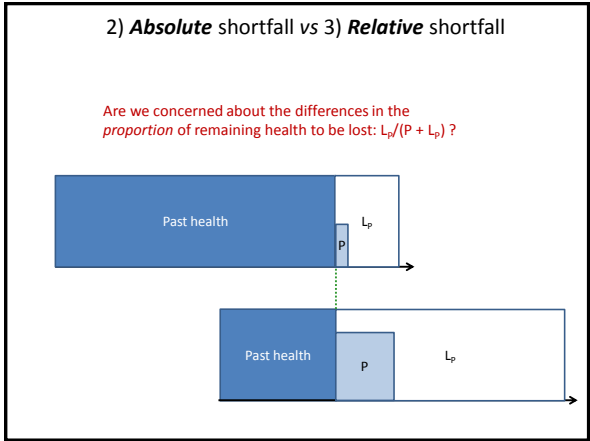
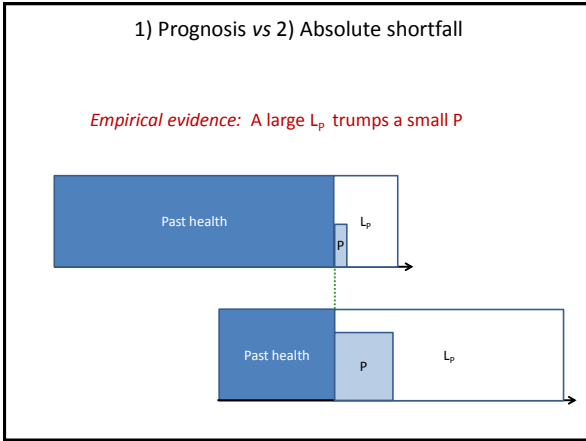
Are we concerned about the differences across P or across L<sub>p</sub>?



1) Prognosis vs 2) Absolute shortfall

Andy's shorter 'end-of-life' or Benny's larger shortfall ???





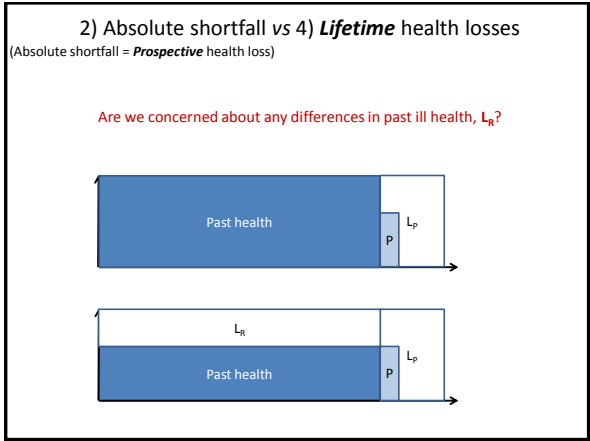
**ASF vs RSF**

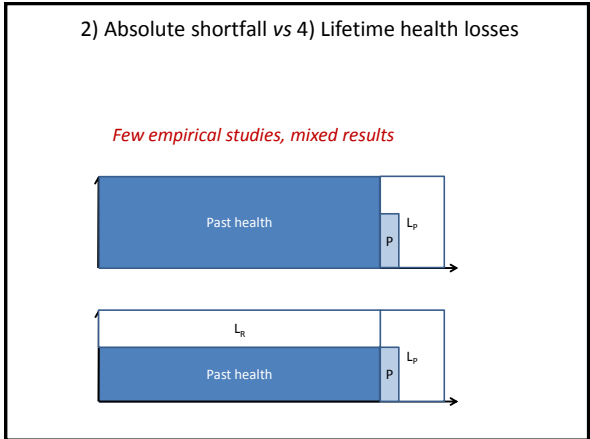
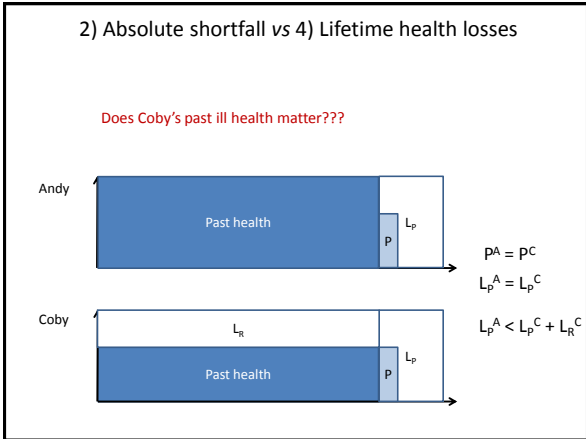
**Problem:**

- RSF is a ratio
  - $L_p / (P + L_p)$ :  $1/1.1 > 20/22.5$
  - Absolute differences in ASF is ignored

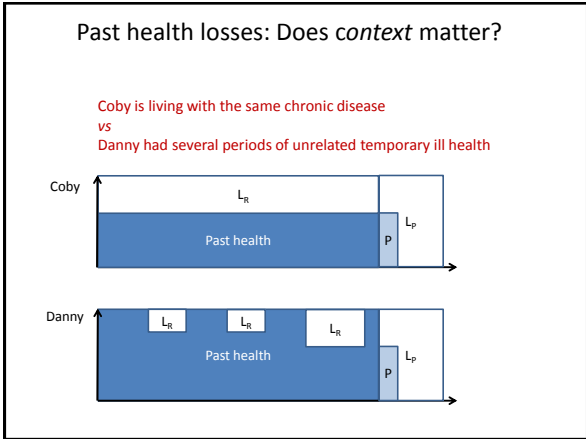
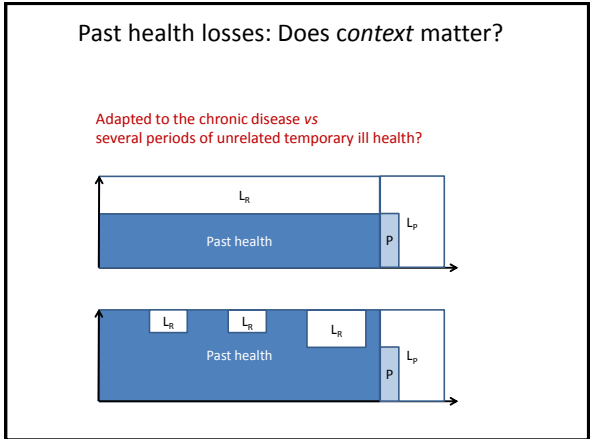
**In practice:**

- Generally, the larger the ASF, the larger the RSF
  - The review of CUAs (Wisløff et al 2013), N = 59
    - All RSF < 0.1 had ASF < 5
    - All RSF > 0.8 had ASF > 15
  - Claxton et al (2015), N = 32
    - Top 3 RSF > 0.7; same ranking as top 3 ASF
    - Bottom 12 with RSF < 0.05; 10 are among the bottom 12 according to ASF (< 1)
- So, priority setting based on programme evaluations suggest very similar ranking whether based on ASF or RSF





- Why only prospective?
- Evaluations are outcomes oriented, i.e. consequentialist
  - 'We cannot change the past'
  - Context: chronic health state (McKie 2015, unpublished study)
    - What matters is the 'utility drop'
    - Adaptation to past ill health



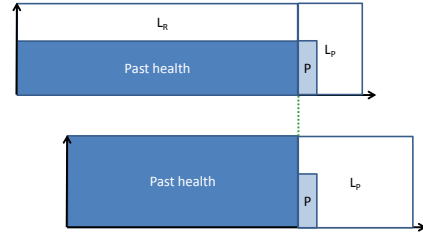
- Relevance of past health losses?
- Patient level
  - Programme level
  - Make it simple:
    - The larger the total area of the white boxes, the worse it is

### Why include retrospective losses?

- The ‘whole life’ argument
  - ‘fair innings’: everyone is entitled to some normal span of health (Williams, 1997 in HE)
  - ‘... it is primarily whole lives, rather than parts of lives, that are of equal worth’ (Ottersen, 2013 in JME)
- Less ‘ageism’
  - An older person with past ill health may have higher lifetime health losses than a younger person

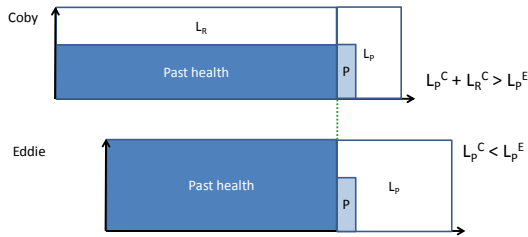
### Less ‘ageism’

The total health loss for the older person is higher than for the younger



### Less ‘ageism’

Coby's larger lifetime health losses or Eddie's larger prospective health loss??



### My own ranking of the 4 equity criteria

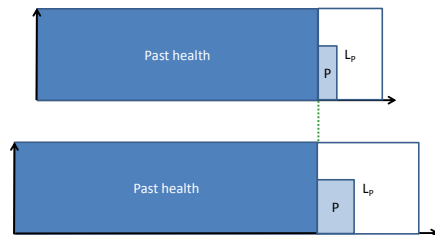
1. Life-time health losses (*with a fixed reference level = HALE of the population*)
  1. The more ill health you experience through the course of your life, the worse it is
  2. Less ‘ageist’, and more favourable to the chronically ill
2. Absolute shortfall
  1. The larger the (prospective) burden of your disease, the worse it is
  2. Neglects differences in past ill health
3. Prognosis
  1. The shorter remaining life time and the worse health state, the worse it is
  2. Ignorant to differences in health losses, and hence, life-time health
4. Relative shortfall
  1. A constructed ratio, which claims to take into account both the severity of the prognosis, and the burden of disease
  2. By definition, it is ignorant to the sizes of the numerator and the denominator

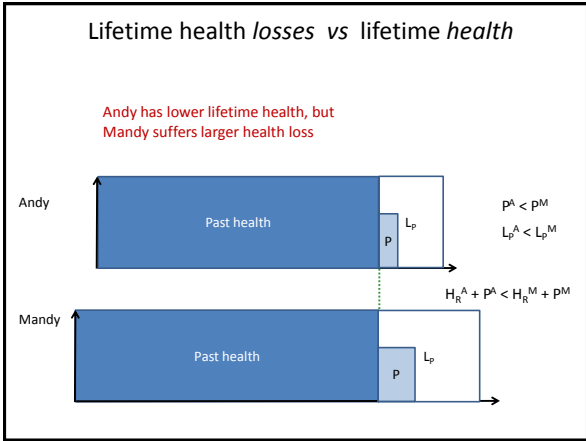
### Lifetime health losses vs Lifetime health

- ‘Fair innings’: Reduce inequalities in lifetime health
  - If less than a normal health span, prioritise
  - If passed a normal health span, you are ‘living on borrowed time’
    - <https://www.youtube.com/watch?v=HFwPkLvM7k>
- Health losses differ, since health adjusted life expectancies (HALE) differ by
  - Gender
  - Social class
  - Actual age
    - Your life expectancy (past life + expected remaining life) increases every day you survive!
 → Reducing inequalities in health losses will favour long-living groups
- Solution: Introduce a *fixed reference level* for a ‘normal’ health span, against which health losses are compared, i.e. the logic of fair innings

### 4) Lifetime health losses vs 5) Lifetime health

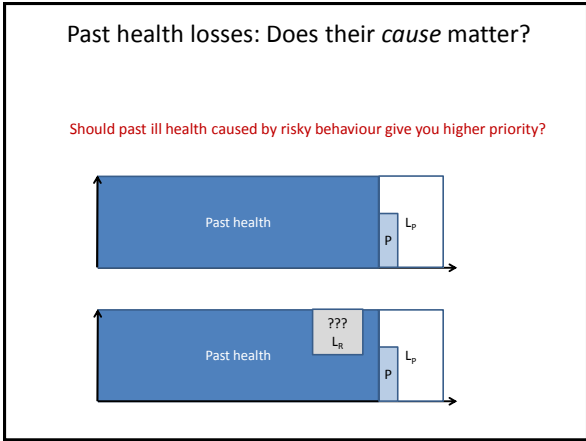
Reducing inequalities in health losses, may increase inequalities in health





### A complicating matter: The causes of inequalities in HALE

- Outside of own control
  - Biological lottery
    - Good vs bad genes, men vs women
  - Social lottery
    - The fortunate vs the deprived
 → Unacceptable inequalities
- Inside of own control
  - Equal opportunities, but different health behaviour
  - Shorter HALE due to well-informed choices
 → Acceptable inequalities



### Back to Norway Suggested equity weights

- Absolute shortfall < 4: weight **1**
- ASF > 20: *max* weight **3**
- ASF 4 < 20 (linear) weight classes

### What is the impact of introducing equity weights for health policy in practice?

- Which proportions of total health care spendings are allocated to disease groups who suffer QALY-losses large enough to be assigned weights
  - > 4
  - > 10
  - > 20
  - > 30
- Claxton-group might have the answer for UK

### Conclusion Equality of what?

- Do look back
  - The less health you *have had* + the less health you can *expect to have*, the worse off you are
- The *equalisandum* should be *lifetime health* rather than lifetime health losses
  - *Cet par*, fortunate groups with a *high HALE* should *not* get priority over the *unfortunate* groups with *low HALE*
- Make it simple:
  - Return to the logic of 'fair innings'