Making a Compelling Investment Case for Optimizing Functioning for Healthy Longevity

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Agenda

Resources are scarce, and to allocate them optimally we need adequate measuring

The third indicator of health completes our view on how resources should be allocated within our health systems

Making a compelling investment case on optimizing functioning

a. **What is needed to enable analysis** of functioning optimization?
b. **What is the potential** to be unlocked with this perspective?

Turning it into practical reality demands joined forces

A continuously increasing need to allocate scarce resources for the purpose of healthy aging[1,2]

- The global aging population is increasing in number and proportion, thus increasing the need for health care and social care, including rehabilitation
- Such care interventions are costly, and resources are not infinite
- There is a strong and urgent need for a sustainable strategy for the allocation of resources and the parameters on which this should be based, in order to prioritize what individuals actually value

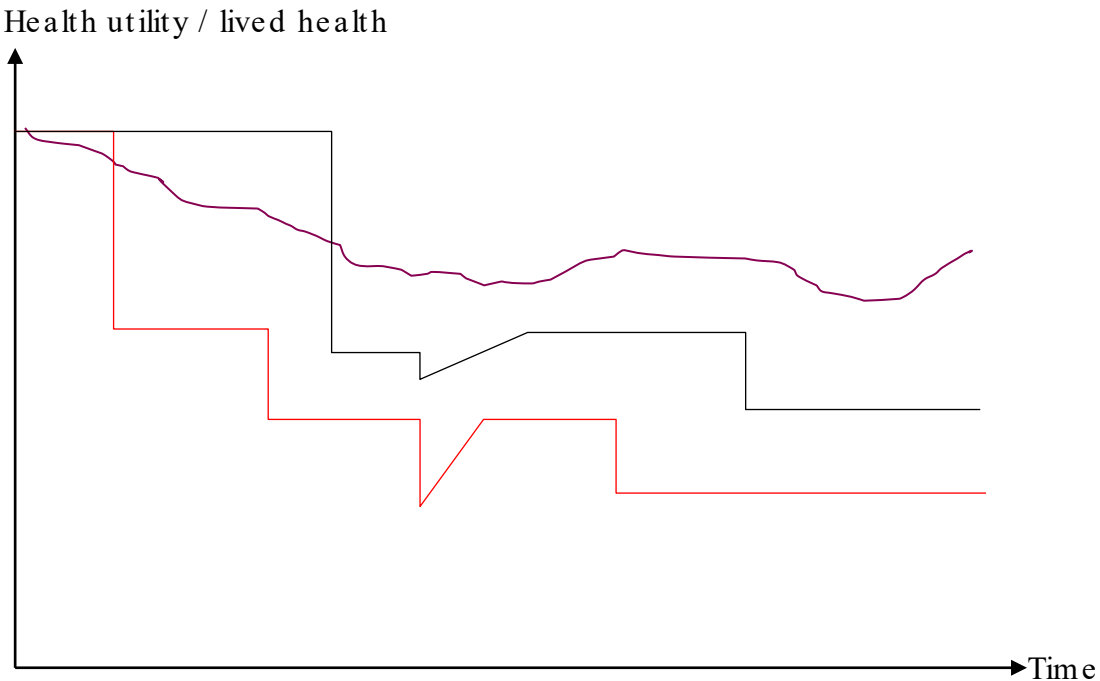
1 WHO, World report on ageing and health, 2015
2 Chatterji et al, *Lancet*, 2015, doi 10.1016/S0140-6736(14)61462-8

Measuring of health supposed to reflect well-being

- Historically, mortality, and also morbidity, have been the two main indicators of health,[1] and have been used to indirectly assess the need for resource-intensive care interventions and activities
- If mortality and morbidity is not sufficient to explain individuals' degree of well-being and if efforts to address these do not correlate with well-being, we lack adequate measuring instruments
- With inadequate measuring instruments, and with a system whose processes, reimbursement and resource allocation are based on the results of these instruments, resources are concentrated in areas that are not necessarily the most prioritized

1 Bickenbach et al, Frontiers in Science, 2023, doi 10.3389/fsci.2023.1118512

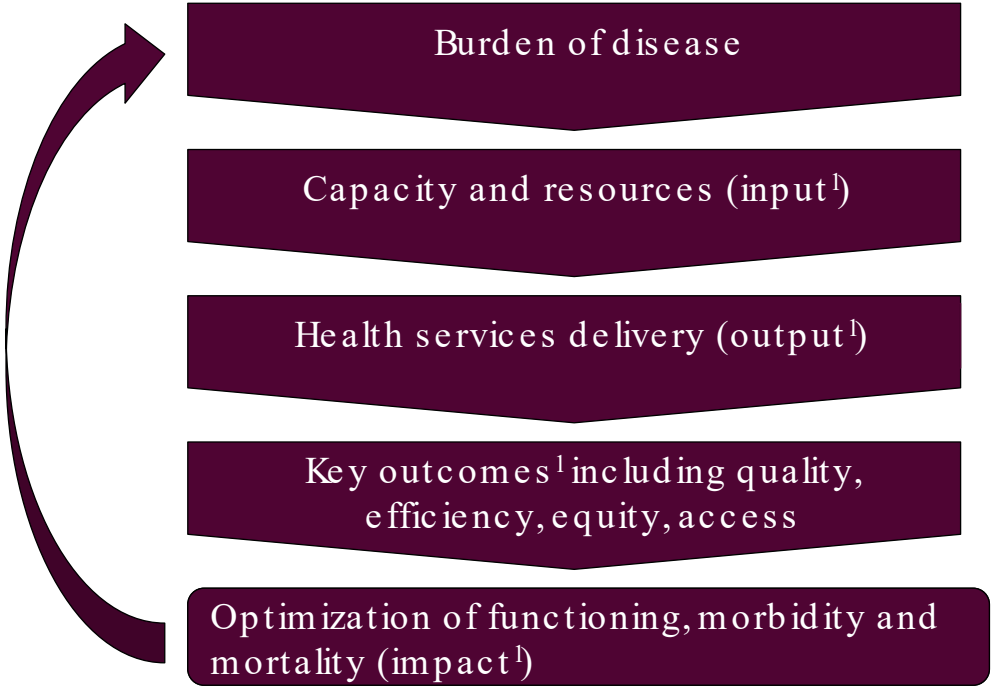
Choice of indicator affects burden of disease



- In addition to mortality, the notion of Health-Related Quality of Life (HRQoL) is used to estimate the utility attached to living in different health states[1]
  - Originally time trade-off, used to estimate burden of disease
  - Basis for analysis of new interventions' potential value
- Emerging question whether traditional HRQoL differs from "lived health" and individual capability put into practice, including contribution to society given our context
- The choice of indicator used to estimate e.g. burden of disease will affect our understanding of both suffering and contribution to society, as well as how resorces are allocated

1 Kobelt, Health economics: an introduction to economic evaluation, 2002, ISBN 1899040 22 6

Quantification of outcomes selected is the basis for allocation of health system resources



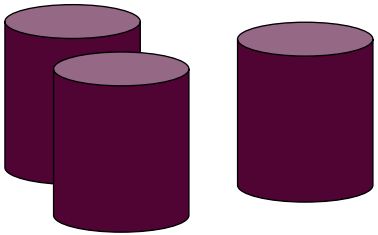
Burden of disease is a proxy for need for resources, given that burden can be eased, and given methods/interventions that are deemed cost effective[2]

Allocation is done accordingly, with the aim to deliver health services for achieving key outcomes such as quality and equity, to impact individual and population health to the best extent possible given the resources and service available

Hence, the indicators used to estimate disease impact are the basis for allocation, evaluation and optimization

1 Stucki & Bickenbach, *Eur J Phys Rehabil Med*, 2017, doi: 10.23736/S1973-9087.17.04565-8.
2 Dieleman & Haakenstad, *Lancet Glob Health*, 2015, doi: 10.1016/S2214-109X(14)70373-0.

Building a case on optimizing functioning, and its value or cost effectiveness, requires data



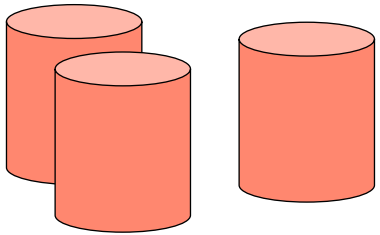
Functioning data
- standardized
- granular
- context-relative
- routinely reported
- easily accessible (monitoring, research)

The value equation[1]

$$\frac{\text{OUTCOMES}}{\text{COSTS}}$$

Incremental cost-effectiveness ratio[2]

$$\frac{\Delta\ \text{COSTS}}{\Delta\ \text{OUTCOMES}}$$



Cost data
- granular[3] and linked to e.g. clinical input
- direct and indirect
- all related costs being quantified
- transparent on in-direct components/ overhead/SG&A
- routinely reported
- easily accessible

1 Porter, *N Engl J Med*, 2009, doi: 10.1056/NEJMp0904131.
2 Kobelt, Health economics: an introduction to economic evaluation, 2002, ISBN 1899040226
3 Example of granularity described in OECD's A System of Health Accounts 2011: Revised edition, http://dx.doi.org/10.1787/9789264270985-en

Functioning data: a draft requirement specification

- **Structure and standardization**: use of the same indicators across conditions and contexts; applying ICF as the "standard reference language"
- **Comparability**: indicators need to be disease-naïve to enable comparison across conditions, thereby enabling resource allocation
- **Granularity**: adequately detailed data
- **Context-relativity**: functioning level needs to be contextualized, and based on the individual's set of preferences
- **Routine-based registration/reporting**: continuous and timely registration, routine reporting to e.g. governmental body
- **Accessibility**: data available for continuous monitoring and research

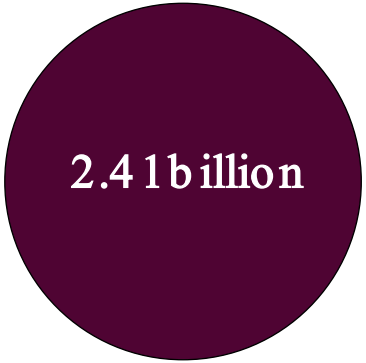
Only when data are disaggregated and possible to link to changes in functioning, we are able to perform an adequate analysis, and only when leveraged it can enable impact

Cost data: importance of complete quantification

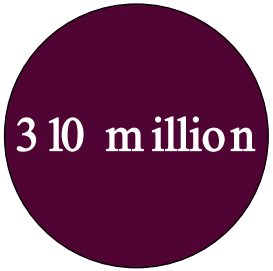
- **Completeness**: covering all (measurable) efforts, including direct and different sorts of indirect costs (e.g. productivity loss, informal care)
- **Transparency**: ability to track how e.g. SG&A were allocated and choice of approach for quantification of indirect costs (e.g. replacement or opportunity)
- **Granularity and linking**: adequately detailed data that are linked to clinical rehabilitation efforts
- **Routine-based registration/reporting**: continuous and timely registration, routine reporting to e.g. governmental body
- **Accessibility**: data available for continuous monitoring and research

- Important to highlight all sets of costs, to enable a fair discussion on the opportunity cost with not using functioning as an indicator
- In cases where there are conflicting incentives, a coordinating body needs to align them, around the individual

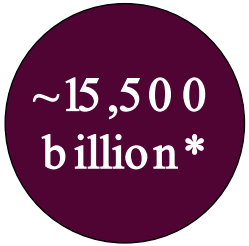
Estimates of annual burden are immense, and so is the potential upside



people with conditions that could benefit from rehabilitation



years lived with a disability



US Dollars

..but the benefits will only be visible if measured, and in several different areas

1 Cieza et al, *Lancet*, 2021, doi: 10.1016/S0140-6736(20)32340-0.
2 Neumann et al, *New England Journal of Medicine*, 2014, doi: 10.1056/NEJMp1405158.
*Based on the most commonly leveraged threshold for willingness to pay per QALY (or averted DALY)

Turning it into practical reality

To optimize functioning, rehabilitation efforts are needed not only within health care

Areas where continuous rehabilitation efforts are needed as well where societal gains are expected [1,2,3]

Health
- Rehabilitation efforts to modify functioning in areas that matter to the individual
- Assistive technologies to maximize functioning relative to context, possibly maximizing well-being

Education
- Assistive technologies in accordance with needs
- Vocational training in accordance with capabilities
- Education being an important determinant of health, efforts in this area affect absolute outcomes as well as health equity in general

Labor market
- Adaptation in labor market in accordance with capabilities lowers thresholds for labor market participation and likely enhances output
- Indirect effects with reduced need of informal care possible to estimate if such effects are observed and quantified in the first place

Social affairs and leisure
- Modification of the environments around the patient and processes that the patient is part of, with involved occupational therapist
- Physical therapy to develop and in order to maintain functioning and movement potential in accordance with social preferences, together with the use of assistive technologies

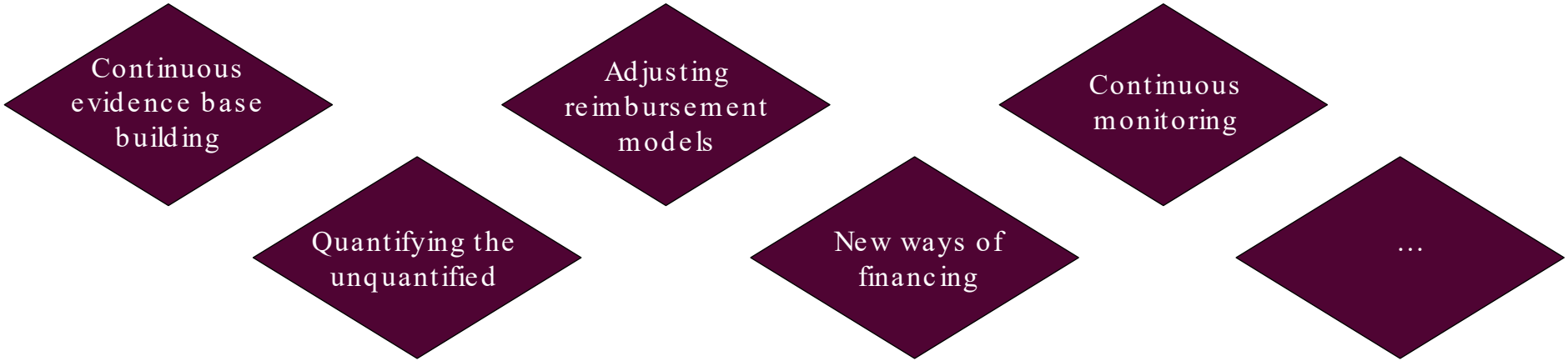
1 Meyer et al, *J Rehabil Med*, 2014, doi:10.2340/16501977-1251; 2 Grosse, *Pharmacoeconomics*, 2019, doi:10.1007/s40273-019-00782-9
3 OECD, Eurostat and World Health Organization (2017), http://dx.doi.org/10.1787/9789264270985-en

There are opportunities within all six health system building blocks[1,2] to unlock the potential of functioning

Health service delivery	- Routine registration of rehabilitations services categorized in ICF accordance - Standardized reporting of functioning indicators
Health workforce	- Multidisciplinary, patient-centered teams, collaborating on optimization of key performance indicators (KPIs) of functioning
Health information systems	- Implementation of ICF-based standards in (national/regional) reporting systems - Routine collection of granular data -> ability to extract disaggregated data
Access to essential medicines	- Evaluation and drug approval being subject to inclusion of functioning KPIs - Individual needs of e.g. assistive technologies being assessed based on the ICF
Health system financing	- Inclusion of functioning (and ”spillover effects”) in burden of disease estimates - Alignment of incentives via integration of functioning in reimbursement models
Leadership and governance	- Strenthening infrastructure and enabling funding for steering on functioning - Putting functioning on the public agenda as a (future) third health indicator

1 Bickenbach et al, *Frontiers in Science*, 2023, doi 10.3389/fsci.2023.1118512
2 World Health Organization, International classification of functioning, disability and health, 2001

There are numerous tools that can be leveraged to help facilitating the use and measuring of functioning



Moving towards health systems that integrate functioning as a third health indicator

- **Today's models** for resource allocation and health outcomes for optimization **could likely be subject to improvement**, having impact on the way we go about financing health systems and monitor their performance
- **Fragmentation of data and misalignment of incentives are obstacles** that we need to remove to enable optimization of individuals' health
- With availability of adequate measuring, linking rehabilitation interventions with effects, and quantification of relevant outcomes and costs, it is **possible to build a solid case for integrating functioning as the third health indicator**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