DISCLOSURES

None

KDIGO
Overview

- Context of healthcare
- Payment models
- Health economics in decision making: the basics
- Decision making and role of economic evaluations in different jurisdictions
- Equity concerns and mitigating strategies
- Future of CKD screening and monitoring
Context of healthcare:
Striving for balance in healthcare

Access to healthcare

Containment of costs

Reward for innovation

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Key challenges for healthcare

- expense and affordability
- rising costs, driven by both volume (ageing population) and expensive technologies
- goals
  - safety, quality and efficiency
  - patient-centred healthcare
  - value-based healthcare
Classification of Healthcare Financing Schemes

- National health system with a public agency to decide about the appropriateness of new health technologies (United Kingdom)
- Social insurance system where such decisions are taken by corporatist arrangements (Germany)
- Social insurance system where such decisions are taken by the state (Switzerland)
Payment models:
United States
- HMO: capitation model as a fixed fee basis
- PPO: discounted fee for service (FFS)
- Medicare and Medicaid: fee for service

Australia
- Medicare Benefit Scheme: retrospective payment system fee for service
- pay-for-performance (P4P): Practice Incentives Program (PIP)

United Kingdom (England)
- The National Health Service (NHS): capitation payment system
- P4P fees: within Quality and Outcomes Framework
<table>
<thead>
<tr>
<th>Advantages</th>
<th>Fee for services</th>
<th>Capitation</th>
<th>Pay for Performance</th>
</tr>
</thead>
</table>
| ▪ lessens provider financial risk  
  ▪ supports patient choice and competition, quality and equity of care | ▪ contains costs  
  ▪ minimises provider use of unnecessary management and treatment services | ▪ incentivises quality and compliance with policy, standards, clinical care processes and best practice |

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| ▪ least effective in containing costs  
  ▪ incentivises overprovision of services | ▪ lacks transparency and accountability  
  ▪ potential for low productivity and quality of care | ▪ does not incentivise health outcomes |
Value Based Healthcare

- performance bonuses to reward providers
- bundled payments, FFS, compensation conditional on health outcomes of patients, example Switzerland
- population-based payments, example Sweden
Defining concepts and benefits

„Customers don‘t buy a drill, but rather a hole in the wall.“

„Payors don‘t buy a technology, but rather patient benefit“

Theodore Levitt
What incentives can support early detection and improved management of CKD?

- Tracking and reporting health outcome metrics, suggests ICHOM
- Adjusting for differences in risk in heterogeneous patient populations
- Sharing savings to ensure financial sustainability
- Encourage a continuous improvement culture
- Extending the scope of payment to full cycle of care
- Investing in data and advanced analytics
- Building a working environment of trust

Paying for value in health care BCG 2019
Drawz et al. 2015 CJASN
Health Economics in Decision Making: the basics
Role of Efficiency in Healthcare

**allocative efficiency**
- efficient distribution of available resources
- considers opportunity costs

**technical efficiency**
- efficient management of a single condition
- considers cost-effectiveness
Role of Economic Evaluations

- **Cost Benefit Analysis**
  - Net costs

- **Cost-Effectiveness Analysis**
  - Net costs/Net change in years of life

- **Cost-Utility Analysis**
  - Net costs/Net change in quality adjusted life years (QALYs)
Please be aware

- cost-effective ≠ efficient
- cost-effective ≠ cost-saving
- cost-effective ≠ affordable

**Cost perspective**

- single entity (hospital, health insurer)
- health system (public) – both state and commonwealth
- societal – includes also patient and indirect costs
- discounting
Framework of health economic evaluations

Cost difference

Effect difference

More costly
Less effective

Less costly
Less effective

"standard of care" in relevant population

More costly
More effective

Less costly
More effective
Initial elements that we need for CEA

- what is the current standard of care?
- what exactly is the new intervention, organised screening program for CKD?
- which screening modality?
- defined elements of the program?
- age when screened?
- patients with family history, and risk factors
- epidemiology of asymptomatic CKD

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Other elements that we need for CEA

- proportion of people who decide for screening in population
- effectiveness of screening
- analytical validity: accuracy in identification of characteristic
- clinical validity: prediction of clinical outcome
- probability of disease when testing true positive
- what age would the disease appear?
Effectiveness data

- proportion of people who decide for preventive treatments in CKD
- effectiveness of the preventive treatments in CKD
- what exactly are the preventive treatments?
- possible adverse events due to preventive treatments
- emotional and psychological impact treatments
- quality adjusted life years
Effectiveness of screening

More costly  More effective
Less effective

Cost difference

increase of mortality and morbidity in CKD (overtreatment) due to
1) false positives
2) preventive treatments
3) treatment of people who would have died of other causes

More costly
Less costly

net effectiveness

reduction of mortality and morbidity due to prevented cases

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Less costly  Less effective
Less costly  More effective
Cost elements, types of costs

- organized screening program
- program administration, tests, counseling
- preventive treatments
- hospitalisation

Who will pay these costs:
- national health
- health insurance?
- out-of-pocket if not covered by health insurance?
Cost information

- More costly
- Less effective
- More costly
- More effective
- Less costly
- Less effective
- Less costly
- More effective

Cost difference

Effect difference

increase of costs due to screening & counseling

reduction of costs due to prevented cases treated

net cost difference

treatment of false positives
**Effect difference**

- More costly
- Less effective

**Cost difference**

- More costly
- More effective

- Less costly
- Less effective

"standard of care" in relevant population

net cost difference

net effectiveness

Cost effective if the “price” of an additional life year or QALY is below a predetermined threshold

"KDIGO"
Decision making and the role of economic evaluations in different jurisdictions:
Decision and reimbursement processes

- Innovation
- Quality
- Efficacy/Safety
- Doctor/specialist support
- PROMs
- Acquisition cost
- Effectiveness
- Target population
- Cost-effectiveness
- Budget Impact
- Regulatory compliance
- Expectations (patients)
- Alternative options
- Need
- Political will
- Public image
What is covered in guidelines, similarities among jurisdiction/regions

- viewpoint of analysis
- choice of comparator
- importance of good data on clinical effectiveness
- discounting of future costs and benefits
- incremental comparisons
- allowing for uncertainty
- presentation of results
What is the economic value story?

- statistically significant clinical differences are not enough
- are there clinically relevant differences in the occurrence of frequent and costly events?
- what medical resources are saved when your product is used? (add-on or replacement?)
- side-effect profiles?
- strengthen your denominator: quality-of-life
Factors likely to limit generalizability of health economic studies

- demography and epidemiology of disease
- clinical practice patterns
- relative price differences
- incentives to health professionals or institutions
- community valuations of health and healthcare
- different ICER thresholds
Equity concerns and mitigation strategies
Equity considerations

- CEAs concerned with distribution of resources
- CEAs outcomes may violate ethical principles of equity
- Equity is important policy objective in almost every healthcare
- Equity incorporates the notion of fairness
- Equity likely to arise in healthcare:
  - Finance and
  - Distribution
**Equity**

**what is actually meant by equity?**

**the precise meaning?**

<table>
<thead>
<tr>
<th>WHO</th>
<th>OECD</th>
<th>Commonwealth Fund</th>
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<tbody>
<tr>
<td>Quality:</td>
<td>Quality: Captured by levels of attainment of health outcomes and responsiveness.</td>
<td>Quality: Captured by the provision of the right (effective), coordinated, safe, patient-centred and timely care.</td>
</tr>
<tr>
<td>Captured by the average level of health and responsiveness.</td>
<td></td>
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<tr>
<td>Equity:</td>
<td>Equity: Captured by the distribution of health outcomes, access and financing</td>
<td>Equity: Captured by the distribution of health quality, access, and efficiency.</td>
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<tr>
<td>Captured by the distribution of health and responsiveness across the population as well as fairness of financial contributions.</td>
<td></td>
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<tr>
<td>Captured as a determinant of responsiveness.</td>
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Mitigation concerns within CKD patients

- Systematic screening for CKD in at-risk individuals
- Identifying non-traditional CKD risk factors
- Other non-traditional CKD risk factors: race-ethnicity, genetics, SES, geography
- High cost of dialysis has created inequitable access, home HD and RRT
- Even cost-effective strategies are not distributed equally (NICE)

<table>
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<tbody>
<tr>
<td>Lack of exposure, visibility, and education regarding home HD</td>
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<tr>
<td>Preconception that home HD is “too difficult and complex”</td>
</tr>
<tr>
<td>Lack of patient confidence to perform home HD</td>
</tr>
<tr>
<td>Fears of vulnerability and isolation from medical support</td>
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<tr>
<td>Unexpected problems at early stage of home HD</td>
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<tr>
<td>Fear of self-cannulation</td>
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- Caregiver burden
- Increased cost of home HD to patient
- Increased travel expenses
- Extended training duration
- Housing problems (storage and water quality)
- Socioeconomic disadvantage

- [https://www.nice.org.uk/guidance/ng107/documents/final-scope](https://www.nice.org.uk/guidance/ng107/documents/final-scope)
The way forward:
A future toward value-based healthcare

Data
- Pure and simple facts

Information
- Structure data

Knowledge
- Ability to use data strategically to achieve objectives

Wisdom
- Capacity to choose objectives consistent with values
Genetic screening

- Genetically inherited CKD is prevalent
- Familial nephropathy
- Cascade screening of at-risk family members
- Whole exome sequencing provides alternative diagnostic in case of CKDu

Connaughton et al 2019
Future of economic evaluations

- “spill over effect” - informal care costs
- informal care costs traditionally valued using opportunity costs
- new stated-preference methods
- develop broader outcome measures rather than QALY
  - example of new metric “productivity-adjusted life years (PALY)”
  - measures productivity as an outcome and at a population level
Thank you