Practice: From cost utility to clinical cost benefit

Most health economists have probably faced a situation where ICER, CEEF, CEAF, EVPI or some other complicated cost-utility analysis outcome do not alone make the case in practical value demonstration and decision making for the clinics. In many cases, elaboration of cost-effectiveness towards clinical outcomes, clinical value analysis and clinical cost-benefit analysis is needed.

In a recent published article “a type of clinical value analysis... increased the clinical interpretation and appeal of modeled outcomes by including both relative and absolute (impact investment...) benefit assessments”. This was done in order to elaborate and improve the practical applications of comprehensive cost-utility results in decision making. In the Supplementary Material G where, as examples,

- clinical cost-benefit analysis (CCBA) approach was used to demonstrate the cost-effectiveness and clinical value simultaneously (Figures G1 and G3) for easier and wider decision making,
- Bayesian treatment ranking (BTR) was used to rank the treatments in terms of their cost-effectiveness in order to assess directly the uncertainty related to ICERs and report the best treatments in a straightforward fashion, and
- impact investment analysis (IIA, Figure G4) with a fixed budget demonstrated the clinical value gained (investment impact) with different treatment options in simple fashion without any complicated outcomes.

STM workshop on SoTe data legislation

ESiOR had the privilege to participate in the excellent working group meeting “Management, steering and surveillance by knowledge” organised by the Finnish Ministry of Social Affairs and Health in Helsinki on February 16, 2016. The meeting sought to gather opinions and to gain understanding on the various aspects and challenges that should be taken into account in the social welfare and healthcare reform in order to have SoTe (social affairs and health) data available for research and management.

The key message expressed by ESiOR CEO Erkki Soini in the meeting was short and concise: comprehensive, anonymous social and health care data should be made available for research purposes through reasonable, and preferably centralised, regulatory approval process to ensure fast and timely research that can be utilised to support decision making. A practical solution for this aim would be a bottom-up-approach in which locally gathered data forms the foundation for a filtered data cube that can be accessed and governed by one governmental institution. Erkki Soini also emphasized the importance of thorough understanding of health economics and know-how of associated methods if the goal is to produce information on health and societal outcomes, effectiveness and cost-effectiveness and to manage and steer social and health care services by performance in the global economy.

The key messages and insights expressed in the presentations of meeting participants and the following panel discussion
were the following challenges and their practical solutions:

- **Boost the Finnish economy!** Finland needs service research, contract research industry and partnerships to support evidence based decision making and leadership. Finland needs to ensure international visibility and promote competitiveness of its service research institutions and contract research organisations to create job opportunities.

- **Concepts** – it is of utmost importance to have a common understanding of concepts when terms such as cost-effectiveness, real-life outcomes, real world data or efficacy/effectiveness become part of legislation. Understanding and know-how of health economics is essential when considering the cost-effectiveness objectives.

- **International competitiveness** – Finland should make fair use of its registries and not give competitive advantage to other countries (e.g. Sweden). It is our understanding that Finnish registries are among the most comprehensive and our digitalisation rate among the highest in the world. Thus, it is all up to us to make things work! The SoTe data should be made accessible for research and management purposes.

- **The Finnish Health Insurance Act** should make room for patient access schemes / risk-sharing schemes / evidence development schemes of (expensive) drugs. Such schemes for reimbursed drugs are possible in many countries and they provide benefits to society through “guaranteed value for investment”.

- **Problems associated with non-interventional studies** and the interpretation of current legislation.

- **Registry studies**, challenges in regulatory approval processes (e.g. time requirement) and what should be considered from the patient perspective.

- **Partial optimization**: registry ownerships, governance, usage, and maintenance need to be agreed on.
Thorough understanding related to the quality, comprehensiveness, measurement and potential biases (setting, selection, Berkson) of registries is needed.

Practical problems associated with knowledge management and evidence-based management.

Discussion was lively and various stakeholders were well represented in the workshop. We remain optimistic in Finland: in the future we may have one stop shop for obtaining fast and timely social and health care data!

Contact: Erkki Soini

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**Seminar on utilization of SOTE information**

ESiOR participated actively in Utilization of SOTE (social welfare and health care) information seminar, which took place 27th January 2016 in Helsinki, Finland.

CEO Erkki Soini took part in a Finnish panel discussion about Companies and health data led by Kuopio Innovation as a representative of health economics.

If you missed the seminar, you can find government’s targets for the social welfare and health care data here (in Finnish). One of the objectives is the effectiveness and cost-effectiveness information, which was commented constructively by CEO Soini. Discussions were lively and ESiOR is participating to the development of objectives and methods.

More information: Erkki Soini.
Future Health and Wellbeing brochure

The publication promotes some of the key expertise and opportunities that Kuopio offers for developing companies as well as presents the local health and wellbeing hub, Health Kuopio.

Brochure can be read from [here](#).

Model helps in hospital space planning

Single-bed hospital rooms are associated with significant benefits based on earlier research. However, the initial investment per bed in single-bed rooms exceeds the initial investment per bed in multiple-bed rooms and the optimal proportion of single-bed rooms is related to a number of attributes. Thus, in the case of decision makers ask:

- In which situations high proportion of single-bed hospital rooms is economically arguable?
- Which factors impact the optimal proportion of single-bed hospital rooms?
- What are the total costs and outcomes (benefits) of different options?

ESiOR Ltd has developed easy-to-use model, which combines the attributes of this complicated entity. For example, the model
can used to assess the per ward optimal proportions of single- and multiple-bed rooms. The model can be tailored case-by-case.

The model has been applied in the assessment of different proportions for single-bed rooms and their consequences for maximum 30 year time horizon in the B11 project of Kuopio University Hospital, Finland (Puijo new hospital).

More info: Erkki Soini.

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**Public health award to HK Ruokatalo**

“The National Institute for Health and Welfare (THL) has granted this year’s public health award to HK Ruokatalo for the nationally significant promotion of public health. The award was received by HKScan Group CEO Hannu Kottonen at the IX national public health event in Helsinki on 23 November 2012.”

- [More information from HK](#)

HK Ruokatalo has made health acts and work for healthier nutrition. A key value driver in the work has been HK’s unique innovation **HK Rypsiporsas®**. ESiOR analyzed the value of the decrease in hard (saturated) fat and salt to the Finnish national health in terms of cardiac events, costs, survival and quality of life with the support by HK Ruokatalo. For more information, please see:

- [Martikainen J, Soini E, Laaksonen D, Niskanen L. The health economic consequences of reducing salt and replacing intake of saturated fat with polyunsaturated](#)
In our recent publication, we analysed the cost-effectiveness of dabigatran in the prevention of stroke for patients with atrial fibrillation. The published analyses are based on a prior, unpublished health economic assessment that has been evaluated by FIMEA in its pilot project. The health care costs and drug prices were updated to year 2011 level for the published cost-effectiveness assessment.

In the base case scenario an additional quality adjusted life year (QALY) cost 13,410 euro with dabigatran compared to warfarin. In the performed sensitivity analyses the incremental cost-effectiveness ratios (ICERs) ranged from 175 to 25,948 euros per QALY gained. When dabigatran was compared to ASA and no treatment, the ICERs were even lower: 9,816 euros/QALY gained and 4,514 euros/QALY gained, respectively.

The cost difference between dabigatran and warfarin that is caused by the Finnish Pharmaceutical Pricing Scheme inflate
the obtained ICERs artificially. In a wholesale price based cost-effectiveness analysis an additional QALY with dabigatran cost only 495 euros when compared to warfarin.

The performed analyses suggest that dabigatran can be considered as a potentially cost-effective treatment alternative for stroke prevention among patients with atrial fibrillation.

More information: Taru Hallinen, Erkki Soini


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**Sustained-release and immediate-release drug formulations: substitutes or different products?**

Our recent publication assessed the real-life use of extended and immediate release quetiapine in patients with schizophrenia spectrum disorders and bipolar disorder in Lappeenranta. Much to the surprise of the study group, the use of extended and immediate release quetiapine differed considerably in real life.

Immediate release quetiapine was used in significantly lower doses when compared to extended release quetiapine: 328 mg vs. 542mg (p<0.001). Doses equal or below 200 mg were used by 48% and 2% of patients on immediate and extended release quetiapine, respectively. At discharge, extended release
quetiapine was significantly more often used as monotherapy when compared to immediate release quetiapine (79% vs. 44%; p=0.003).

The study findings may have importance when choosing treatment comparators for health economic assessments or when assessing the effectiveness of drugs based on registry data.

More information: Taru Hallinen, Erkki Soini

References:

First Finnish Adjunct Professor in Pharmacoeconomics

Janne Martikainen, PhD (health economist and partner of ESiOR Ltd) is the first adjunct professor in the economic evaluation of pharmaceuticals in Finland.
The Finnish Pharmaceutical Pricing Scheme distorts health economic assessments

We analysed the impact of pharmaceutical pricing scheme on cost-effectiveness analyses in Finland. The Finnish drug retail prices are based on computational pricing scheme that does not reflect true cost of dispensing at pharmacies. The drugs with low whole-sale prices are sold at retail prices below their true costs whereas the drugs with high whole-sale prices are sold at retail prices exceeding their true cost (i.e. they include pharmacy premium).

In cost-effectiveness analyses pricing scheme induced distortion worsens the obtained incremental cost-effectiveness ratios (ICER) when new and expensive drugs are compared to cheap generic drugs. In the analysed scenarios the pricing scheme induced cost difference between expensive and cheap drugs increased the ICERs by 164-485 144 Euros/QALY.

Because drug reimbursement is not 100% for all drugs in Finland, Finnish patients needing more expensive drugs end up subsidizing patients whose illnesses can be treated with cheaper drugs. Usually the insurance based systems are designed to have exactly the opposite outcome i.e. they are aimed at decreasing the financial burden of those with the highest medical expenses.

Selling of goods below their true costs is referred to as predatory pricing in economics. It is a pricing strategy that companies may take to undermine or eliminate competition. In many countries these practices are illegal. Our question is: why is this kind of pricing strategy forced upon Finnish pharmacies by the Finnish legislation?

More information: Taru Hallinen, Erkki Soini
References: