

Sustainable Healthcare system – the health insurance perspective

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Sustainable solutions to develop Healthcare through health insurance

- As a single payer insurance company the Estonian Health Insurance Fund (EHIF) has the responsibility to procure all health services in case of a person's illness and has therefore a strong influence on the health system.
- EHIF is using the data to advance quality procurement and addressing challenges within the health service provision.

Estonia has made significant efforts to achieve universal health coverage

- Single public insurance provider (Estonian Health Insurance Fund)
- Automatic enrollment for:
 - children, pensioners and disabled
 - adult population, except those w/o formal employment/entrepreneurial activity and not registered as unemployed
- App. 96% of population covered
- Financed by payroll tax (13%) plus transfers for unemployed and students
- Health expenditure app 6,5% of GDP: EHIF (70%) + OOP (ca 20%) + govt
- ALE – approximately 77 years

Challenges – comprehensive and sustainable benefits package

- Insurance coverage effected by:
 - central uniform service and price list
 - capped contracts with FPs and (strategic) hospitals
- **Primary care** (every Estonian is assigned to family practitioner):
 - capitation plus FFS (tests, minor ambulatory services)
 - QBS (mostly input, some output indicators)
- **Specialist care** (mandatory referral from FP, free choice of provider):
 - out-patient – FFS, in-patient – DRG+FFS
- **Nursing care**, both out- and in-patient (mandatory referral)
- **OTC pharmaceuticals** – 75%/90%/100% compensation for prescripitons,
 - ingredient-based (max level - 2nd lowest market price)
- **Sick-leave benefits** – 70% of salary, up to 6 months
- **IT**: fully electronic invoicing, prescriptions and SLBs (structured data)

What kind of data do we collect today?

- **Centralized governmental databases**

- Cancer registry etc
- De-centralized (between different organizations and bases):
 - Insurance registry;
 - Registry for drugs;
 - Epicrisis database (e-health);
 - Imaging database;
 - Prescription database (including prescription interaction database, used by family physicians and pharmacists).

EHIF databases

- EHIF and the citizen
 - SAP CRM module, where we accept applications, process benefits, anything related to the insured person's contact with EHIF
- EHIF and our partners (service providers)
 - TORU or „Pipeline“
- Sick-leave benefits
- Prescription database
 - Data collection that is linked to EHIF's own information systems.

Health Insurance Information is divided between two datasets regulated by law

1) Health Insurance Database, where we collect data:

- 1) About the citizen
- 2) Type of insurance
- 3) Insurance provider (who pays social tax for this person)
- 4) About the organization who maintains the source information registry

2) Prescription database

- Physician view:
 - Can create prescriptions
 - Revise all prescribed medication
 - Cancel prescription
- Pharmacist view:
 - Browse prescriptions
 - Send purchasing information
 - Invoicing (prepare, review, confirm)
- Patient view:
 - State portal citizen view:
 - Browse prescriptions
 - Self-surveillance
 - E-Health patient portal
 - Set purchase authorizations
 - Set reading protection for physicians

Patient's portal



Pharmacist's IS



Doctor's IS



Other's IS



X-ROAD



Digital Prescription Centre



We have developed a fast, trustable and secure channel for our partners to submit information to EHIF

- Pipeline - (TORU)
- Unified solution:
 - All contractual partners of EHIF (specialized care, primary care, dental care) submit medical claims into the EHIF system
 - Approximately 7 million claims per year
 - Most comprehensive and detailed collection of medical data in Estonia
- One solution streamlines and simplifies the process of submission and dealing with billing, which in turn improves satisfaction with EHIF services of our partners
- Data communication is electronic, **structured**, XML based, no paper!
- All these claims make one big collection of data, where **quality** of this data is extremely important -> automatized quality controls for technical aspects (is the format correct) and content (does this hospital offer services they billed for)
- Patients can also view their medical bills online at www.digilugu.ee

Collecting this data enables us to forecast the long term financial stability of Healthcare and the need for services

- The planning is started with a compilation of the long-term prognosis (30+ years) of health insurance benefits
- It is followed by 4 year budget planning principles and financial prognosis (depending on Ministry of Finance forecast, prognosis of financial stability, priorities for purchasing, basis for annual budget)
- Demand for medical services in the following year is assessed annually (for specialized medical care, nursing care, and dental health care services). Demand assessment is carried out in all specialties and treatment types **on the county level.**
- By adjusting the assessed demand with budgetary funds, the result is the funded demand (the maximum number of the health care budget) - an important input for the planning of contract offers from health care providers.

Our database gives us a unique way of planning the budget and contracts already with new prices for the following year

- All planning and budgeting is done via SAP Business Warehouse (planning and reporting system)
- Specific methodology for planning: according to the actual use of services and known trends and need for services
- The process:
 - We factor in the new price in SAP,
 - find the new average cost for a case,
 - and plan the new budget and contracts (including cases per contract) based on the calculations
- This enables to us compare budgets and contracts between different years by different prices and to new prices

Therefore, monitoring contractual partners also enables us to assess and develop quality of healthcare services

One way of monitoring services is to check medical files via targeted sampling:

- A systematic check of medical files is carried out by medical advisors from the Health Insurance Fund. The check can be carried out entirely electronically.
- Each six months about 4,200 medical files are reviewed with the aim of assessing the compliance with the legislation of the health care services provided and the bills submitted to them.
- On the basis of targeted sampling, follow-up checks, and other appropriate follow-up actions are planned for the future.
- The summary results from checks of the medical files will be discussed on the both partner level as well as the Health Insurance Fund management level.
- The summary report is also published on the website of the Health Insurance Fund.

How do we use analysis of medical records for future planning?

- We can use our database as an independent tool to check any type of hypothesis (descriptive, correlational, etc) that can be tested with the data we have.
- We can use this data to prove certain assumptions statistically to point out areas in the services that need improvement. **Monitoring contracts is not only relevant for accounting purposes, but also of clinical relevance.**
- Example research questions:
 - Who of our partners provided this service more/less compared to others?
 - Why might there be a difference in how much the services is provided in certain locations?
 - How has the amount of certain procedures changed in time?
 - Is there a correlation between these variables?

An example of how we can use checks and targeted sampling to improve both quality and patient outcomes

- Whether referring to an endocrinologist is justified in the case of type II diabetic patient by family physician?
- Background: There are currently long waiting times to see an endocrinologist and many of these visits could be avoidable.
- We decided to assess how cases of diabetic patients are managed on the primary health care level on the basis of documentation made by primary care physicians before referring the patient to an endocrinologist.
 - For example, we looked at the patient history with all the details to argue a reason for the need for referral to specialized care
 - Was there enough data and observations to justify a referral or could the primary care physician continue the treatment without a referral?
- Outcome: The quality of health care services would improve as a result. The waiting times would shorten if we could limit avoidable visits.

Another way of monitoring service quality is to control standard queries

- The bills for medical services are electronically transmitted to the Health Insurance Fund and to avoid major mistakes, electronic controls have been created and further developed each year
- In the past, there were many incorrect bills that electronic controls could not catch before accepting by EHIF
- Now, EHIF conducts quarlery controls (standard queries) to detect these mistakes

An example of controlling for double procedures for one patient

- The standard query may find that there are bills for the same service on the same day for the same person, which were sent to EHIF on two different bills.
- Our analyst looks at the data to confirm that there is the same bill for the same exact procedure
- We ask for the partner for detailed information—was there a medical reason why this patient needed the same procedure twice in one day?
- After establishing whether this was medical necessity or a billing error, we will save the results of this query in our database.
- Saving and collecting data about the results can help up assess whether certain hospitals, or on a national level, there are medically unnecessary procedures recommended to patients.
- Or vice versa, when there is anecdotal evidence or claims in the media or brought forward by partners, we can check for the validity of these claims.

However, standard queries and analyzing information on medical claims is not only for accounting purposes but of clinical relevance

- Since 2012 we analyze and report data from our partners' medical claims to give feedback about healthcare quality, clinical outcomes, etc.
- We look at indicators such as:
 - Re-admittance
 - Average length of stay
 - Waiting times
 - When prescribing medicines, what is the percentage of medicines prescribed based on active ingredient (not brand medicines)
- After publishing data we have feedback discussions with our partners—what can we improve as a whole, and on what level?
- We look at indicators both in specialized care and on the primary care level (developed in collaboration with the Primary Care Association)

EHIF focuses on increasing healthcare quality by using its data for research and measuring quality on a national level

- Since we have a comprehensive collection of data from 7 million medical claims a year, we provide our data (de-personalized) for researchers outside the organization as well
- However, we conduct research also internally.
- Our division of Healthcare Quality collaborates with the Healthcare quality indicators advisory board to analyze established indicators to make **conclusions about the state of care in Estonia and improve quality of care.**
- In 2016 we published the first conclusive report of our findings.
- Annually we measure quality indicators that we have developed in collaboration with the World Bank (using claims and prescriptions data).
- All indicators are displayed on our website free of charge and can be viewed in an interactive chart which displays results about each hospital.
- In addition to publishing existing indicators, we work closely with medical experts and analysts to increase data quality and to develop new clinical indicators.

Drug interaction database

- 2016 was implemented the decision support of e-prescribing – **drug interaction database**, assessing pharmaceutical interactions during the prescribing process.
- Can be accessed by physicians, from 2017 also by pharmacists
 - Pharmacists can make recommendations also based on over the counter medicines and food supplements (in addition to prescribed medication)
- The goal of this database is to improve Healthcare quality, but also improve patient safety (by decreasing possibly dangerous drug interactions)
- Since July 2016 it is obligatory to use the database
- Each month approx. 2200 drug interaction notifications.
- Based on International experience, we can say that around 15-17% of these prescriptions are changed after the notification

Last, but not least, we are in the process of developing clinical decision support

- Mainly for primary care practitioners and nurses
- Interactive and integrated to current tools physicians already use
- Taking patient history, health records and past treatments and combining patient data with evidence-based treatment guidelines (Estonian and International), research and algorithms
- Tailored and targetted recommendations for treatment for each patient, enhancing personalized medicine in Estonia
- Increasing quality of healthcare services of the primary care level, increasing the effectiveness of preventive care

Thank you!

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