

Report of the 9th EHFCN Open House Countering corruption, tackling fraud and reducing waste



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<i>Conference Opening</i>	Pavlos Polakis, Deputy Minister of Health (Greece)
<i>The institution of the General Inspector of Public Administration and the conduct of coordinated audits in the Health Sector</i>	Dinaki Fotoula, Special Inspector, General Inspectorate of Public Administration (Greece)
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<i>Strategy to prioritize counter fraud investigations actions introduced by the Head of the Audit and counter fraud Directorate of the French national insurance fund</i>	François Grandet, Deputy Head to the DACCRF, Department of Audit, Litigation and Fraud Control, CNAM (France)
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<i>Stand of Affairs of the project on Collection of data of meniscectomy (national incidence rates and strategies on overuse)</i>	Annelies Wouters, MD, NIHDI (Belgium)
<i>Waste and lack of compliance in orthodontics in Norway</i>	Anette Randeberg, Head of Department Reimbursement, and Ole Trapness, Head of Section at the Control Department, Helfo (Norway)
<i>The Medical Devices Registry of EOPYY</i>	Maria Panousopoulou, Head of Medical Devices Department, Directorate of Strategic Planning EOPYY (Greece)
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<i>Machine Learning for Fighting and Preventing Fraud and Corruption</i>	Vassilis Plagiannakos, Associate Professor & Head of Department of Computer Science and Biomedical Informatics, University of Thessaly (Greece)
<i>Cybercrime in Medical Area</i>	Georgios Papaprodromou, Police Colonel, Forensic Document Examiner, Director of Cyber Crime Division (Greece)
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<i>Delivering efficient healthcare services in times of fiscal sustainability challenges</i>	Per Eckefeldt, Department Economic and Financial Affairs, European Commission
<i>Prior Authorization of Pharmaceuticals: Towards a transparent and user friendly electronic system</i>	Chara Kani, Head of Medicines Administration Planning & Monitoring, Directorate of Medicines, EOPYY (Greece)
<i>The role of Statistics in optimizing the allocation of resources and eliminating waste</i>	Sotirios Bersimis, Assistant Professor UNIPI, President of EOPYY, President of EHFCN
<i>Project Proposals:</i> <ul style="list-style-type: none"> <i>The EU Registry for Medical Devices</i> <i>The EU Biosurveillance System</i> 	George Paliouras and Sotiris Bersimis

Day 3 (Optional Training Day at the University of Piraeus)

<i>Training Opening</i>	Markos Koutras, Prof. and Vice Rector of University of Piraeus (Greece)
<i>The effort of internal control system in anticorruption logic</i>	Carlo Milli, Administrative Director Pisa University Hospital (Italy)
<i>Statistical tools against fraud and waste in healthcare I</i>	Sotiris Bersimis, Assistant Professor, University of Piraeus President of EOPYY & EHFCN
<i>Statistical tools against fraud and waste in healthcare II</i>	Ekin Tahir, Brandon Dee Roberts Professor and Assistant Professor in McCoy College of Business, Texas State University (USA)
<i>Machine learning techniques for fighting fraud/corruption</i>	Vassilis Plagiannakos, Department Head, Department of Computer Science and Biomedical Informatics, University of Thessaly (Greece)

Introduction

The 9th EHFCN¹ Open House was hosted by the Greek National Organization for Healthcare Provision (EOPYY, www.eopyy.gov.gr) in Athens (Greece) from 18-20 October 2018. EHFCN is very grateful to Mr Sotiris Bersimis, President of EOPYY & EHFCN, for his kind hospitality.

The Open House consisted of 2 days filled with panel discussions and workshops. There was a closed day only for EHFCN members followed by an extra-ordinary session of the General Assembly and an open day accessible for all interested parties. There was also an optional training day on data mining and machine learning techniques.

This report provides you with a condensed and non-exhaustive overview of the themes presented at the occasion of this event. For further detailed information, we remain at your entire disposal. Ask us anything at office@ehfcn.org.



¹ European Healthcare Fraud and Corruption Network

Day 1: 18 October 2018

Conference Welcome - Sotiris Bersimis, Assistant Professor, University of Piraeus (Greece), President of EOPYY & EHFCN

As President of EHFCN, Mr Bersimis welcomes everyone to the conference. He starts with an introduction of the aim of the Open House from a Greek point of view.

The Greek economy collapsed totally in 2015. Measures to improve the healthcare sector have already been taken. By gathering with experts and scientists, he believes 'We can do more' to continue the process of improvement.

Conference Opening - Pavlos Polakis, Deputy Minister of Health (Greece)

A representative of the Greek Minister of Health repeats that the last 3 years, after the collapse, a lot of improvements and changes implemented in the healthcare sector.

She ended with the message that the Minister of Health believes this congress can help in improving tackling fraud and corruption.

The Institution of the General Inspector of Public Administration (GIPA) and the conduct of coordinated audits/combined inspections in the Health Sector - Dinaki Fotoula, Special Inspector, General Inspectorate of Public Administration (Greece)

The General Inspector of Public Administration is the coordinative body of inspection and control that promotes the values of legality, integrity, transparency and accountability in Greek Public Administration. It is established in 2002 and belongs to the Ministry of Interior Public Administration and Decentralization.

The mission of the General Inspector of Public Administration is:

- Ensuring the efficient and effective functioning of public administration.
- Monitoring the action and evaluate the performance of all the Inspecting-Controlling Bodies/Units of Public Administration.
- Detecting and track down corruption and maladministration phenomena.

After having received a prosecutor's order, the special inspectors of GIPA may, by their specialized knowledge and scientific training, serve as investigative officials helping the judicial authorities in their fight against corruption.

From the experience gathered so far, the GIPA is confronted with the phenomenon of dispersion that exists among the Inspecting – Controlling Bodies/Units, which obstructs their most effective and efficient operation. This is an imperative need to be dealt with, in order to confront the overlapping of inspections and controls and what it involves (loss of man-hours, cost rising, waste of human resources, etc.)

The merge of the Inspecting – Controlling Bodies/Units consists the most probable solution for the effective and fast dispatch of the inspections in total, including multiple benefits such as: reduction of the total time demanded for an inspection/control, easier grouping of inspections

and controls, more effective evaluation and efficient coordination of the inspection work, a uniform administrative framework,...

The next steps will be the standardization of inspections and controls with the use of relative questionnaires (checklists). The purpose of the structure used in the checklists is, mainly, to inform Inspection Authorities about the subjects they have to focus on during the performance of Regular Inspections, to facilitate the performance of inspections and improve their effectiveness and efficiency, to help Authorities become acquainted with the subjects being audited during the performance of Regular Inspections.

This also will facilitate the implementation of combined inspections/controls with a complex object of control (organized crime versus individual cases), conducted by inspectors of various qualifications. A methodology for the performance of inspections will be established through the preparation of (a) a Manual for the performance of Regular Inspections, and the adoption of (b) Standardized Regular Inspection checklists for all established operations in public services and organizations.

Mr Tom Verdonck, Vice-President EHFCN, confirms the complexity of corruption, fraud and waste in healthcare. Therefore it is very helpful to have good insights in actions already done and their results.

Workshop Part I: Exchange of best practices in countering corruption

Mr Macchia introduces the first workshop and states that corruption is a general problem and can be considered as 'mafia'-practices. With EHFCN we hope to tackle this scourge. The objective of the workshop is to share experiences and to give concrete input in this (inter)national guidelines.

Nathalie De Wulf, Managing Director EHFCN - *Stand of Affairs of the Background paper of the OECD Project on General risks and vulnerabilities of corruption within public healthcare services at local level*

The "MENA-OECD² Governance Program" is a strategic partnership between MENA and OECD countries to share knowledge and expertise, with a view of disseminating standards and principles of good governance that support the ongoing process of reform in the MENA region. Via this program, Tunisia requested assistance to support it in its Open Government reforms and fight against corruption. OECD conducts a research project about corruption risk assessment in service delivery on healthcare services provided by two university hospitals in one of 3 municipalities in Tunisia. The service delivery areas selected include tax collection, waste management services and healthcare provision at local level. A background paper was drafted by EHFCN to discuss the general risks and vulnerabilities of corruption within public healthcare services at local level.

² MENA: Middle East and North Africa

OECD: Organization for Economic Co-operation and Development Governance

At the same occasion, a paper of 20 country best practices from 18 countries was compiled. Experts (EHFCN members, European Commission, Transparency international, ISSA, GHCAN, WHO HQ, IMF, UNDP, Union for the Mediterranean, World Bank, Open Government Partnership,...) were contacted to fill in a short survey of 5 questions about preventing and countering corruption in public healthcare at local level:

- 1) national context (the regulatory/political situation creating a context favourable to actions undertaken)
- 2) actions (Awareness, Prevention, Suppression)
- 3) SWOT analysis (relevant to the anti-corruption actions or measures)
- 4) results obtained so far
- 5) next steps and conclusions

Regarding the timelines:

- Thanks to a great input and willingness from partners and members, EHFCN has compiled 20 very interesting country contributions from 18 countries.
- The next step in 2019 is to organize a seminar on drafting guidelines for countering corruption in healthcare with a group of experts.
- The guidelines and recommendations will be finalized and launched at the next Open House event in 2019.

Mr Macchia concludes it is very useful to have all these interesting information as a good basis to continue working on.

Analysis of the Corruption in the Italian Healthcare Sector in a preventive perspective, by the creation of a new awareness on the phenomenon in the whole society, Laura Roberta Ferrario, Anti-Fraud Manager, AmTrust Europe LTD (Italy)

Corruption is a phenomenon very much felt by the current Italian government and by a large number of the Italian family, who believe that is not possible to fight against this phenomenon alone.

Precisely, over half a million Italian families have received at least once requests for money or other to be facilitated during hospitalizations, interventions, medical examinations, and in the last year alone, 107.000 families have been victims of corruption in healthcare. Financial losses linked to healthcare corruption are quite important: 20 billion € were lost and this money could be invested in research and preventive medicine.

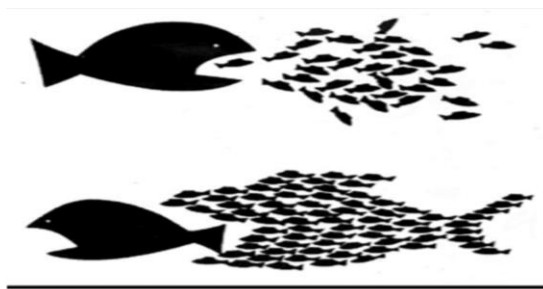
This fact revealed the scarce awareness of the people about the gravity of the phenomenon of corruption and their belief of not being able to win it, being aware at the same time of the importance of fighting in order to ensure the sustainability of the Italian healthcare system.

Analyses of the psychological mechanisms behind corruption, reveal that corruption is caused by a combination of individual liability and of systemic issue gaps. In Italy, special corruption prevention strategies have already been implemented in the organizations of the National Health Service.

Corruption in healthcare means breaches to the right to health of the citizens. AmTrust strongly and firmly believes in the efficacy of the EHFCN actions and they will do their best to support it all together with all the other members.

Below are some recommended proposals to be adopted at national and local level to tackle corruption (are listed as for instance):

- ✓ Input to EHFCN's future guidelines and recommendations
- ✓ Use of artificial intelligence
- ✓ Training proposals for young doctors and students
- ✓ Creation of a specific observatory
- ✓ Taking into account patients' voices by involvement of patients associations
- ✓ ...



Mrs Ferrario ends with the message that members are not alone in the fight against corruption and that the legal framework is very important.

"The central contribution of the Network [for its members] is that members no longer feel alone in the fight against corruption during their individual actions of resistance." – Kuleta Haki Transition Review, December 2017

Protecting those in Need: Reducing Error, Fraud and Corruption in Health and Care Sectors, Professor Graham Brooks, University of West London (UK)

Mr Brooks mentions that a new organization, called the National Health Service Counter Fraud Authority (NHSCFA) is established in 2017 in the UK. Its mission is to lead the fight against fraud, bribery and corruption in the NHS. Every year, £ 1.25 billion are lost due to fraud and corruption.

According to Mr Brooks, it is important to protect both patients and health professionals careers.

For instance:

- The NHS employs 1,3 million people. Consequently, risks of internal frauds are high.
- On the other hand, NHS does not employ enough nurses. Besides, in order to become a nurse, the student has to take a loan.
- NHS does not provide the necessary medical service.
- The council tax pays for social care but it is too low.
- There is no financial support for patients who receive private care.
- The NHS does not invest enough in counter fraud specialists.
- ...

Furthermore, the EU has an aging population, but this is only one healthcare issue to be addressed. There is also a hidden population often excluded from the assessment of healthcare

provision, which care for elderly, infirm family members (with a significant increase in dementia). Mr Brooks suggests healthcare research should be expanded, and always include research on home care as well. Once the patient is out of the hospital, healthcare provision is still often needed but home care and informal care - a continuum of healthcare - are often neglected in healthcare research. These too are open to opportunities of error, fraud and corruption. As the EU populations are aging, so too will be increased the need for home care. This can fall often under the responsibility of young people and family members, who are unable to cope with. A far more united assessment of health and healthcare systems is needed. Also a strong law transparency is a good starting point for guidelines.

It is necessary to educate people on corruption and also to attract authorities' attention on this phenomenon: money can be saved for any patient in Europe.

Workshop Part II: Exchange of best practices in tackling fraud

Reorientation of the Belgian Health Insurance funds: Pact with the Minister, Hans Nagels, Advisor to the Belgian Minister Maggie De Block (Belgium)

The Belgian Minister of Public Health and Social Affairs signed on 28/11/2016 a pact with the insurance institutions. They are responsible to manage government money to reimburse medical acts given to Belgian citizens. The insurance is compulsory.

Currently the insurance institutions work separately. The scope of the pact is to join the 5 national health insurers in Belgium together with the governmental insurance institution and the insurance institution of the National Railway Company: they have to work together. To this end it is important to reconsider thoroughly the missions of insurance institutions, to examine possibilities of differentiation in the front office, and cooperation and standardization in the back office to gain efficiency.

The pact consists of 6 axes, each one treating several aspects of the roles of the insurance institutions:

- Axis 1: Information provision, assistance and health-coaching to the members: insurance institutions will have to educate people, to coach them in order them to be able to get information for their health. To this end, insurance institutions have to support them. The degree of commitment and compliance can be incorporated in the allocated amount of variable administration costs.
- Axis 2: Contribution to knowledge building and policy preparation in healthcare
- Axis 3: Enforcement and efficiency
- Axis 4: The advisory doctor's corps (doctors are working in 1 fund)
- Axis 5: The compulsory additional insurance
- Axis 6: Administrative power, good governance and transparency!!!

Especially axes 3 and 6 are important in the context of fraud and possible abuse.

The full text of the pact is available on multiple Belgian websites (only in Dutch and French). A good reference is: www.ocm-cdz.be.

The goal is to strive for a stable and responsible budgetary framework to dispose of sufficient financial means at which maximal value-for-money is pursued.

Dentists under investigation, Rob De Ridder, bacc., Dutch Healthcare Authority (NZA) (Netherlands)

Holland is a small country of 17 million inhabitants with a high quality-standard of healthcare. Dutch people are generally satisfied with the quality of their medical treatments but the costs of their healthcare are high. Healthcare expenses amounts up to 100 billion € which corresponds to 14% of GDP. For dentistry, 5,000 €/year/patient is spent.

Also the budget of Dutch regulators is not unlimited. That's why good boundary conditions are important for patients.

One of these conditions is the possibility for patients to check their bills. That's why it is important for healthcare providers to show - and be transparent about - their treatments and prices.

Concerning the dental sector, the Dutch Healthcare Authority (NZA) observed that 25% of the dentists did not inform patients correctly. NZA thought up a plan to influence the behavior of dentists by a smart approach. It decided to focus on the remaining 75% (500 of the dentists) and thanked them on social media. Concerning the remaining 25%, NZA talked with them and explained them what they were doing wrong. It is also important to educate students and young doctors.

⇒ The primary focus is thus on what is going well, secondly bad doers are in the spotlight.



Figure: Results and lessons learned: Thank-you-card sent to 500 dentists with an overview of the approach (use of social media, professional organizations,...)

Mrs De Wulf completes with the reference to a Multidisciplinary team and she makes a link with the topic of 'Dentistry in Belgium', brought by Dr. Georges Dusart³ at the Open House in Prague (Czech Republic). She appeals to the members to come up with information, projects and recommendations to inspire us all.

³ Medical doctor working at the NIHDJ, meanwhile on retirement.

The back-office approach, Johan Van Dorst, Staff member quality and data mining, NIC-CIN (Belgium).

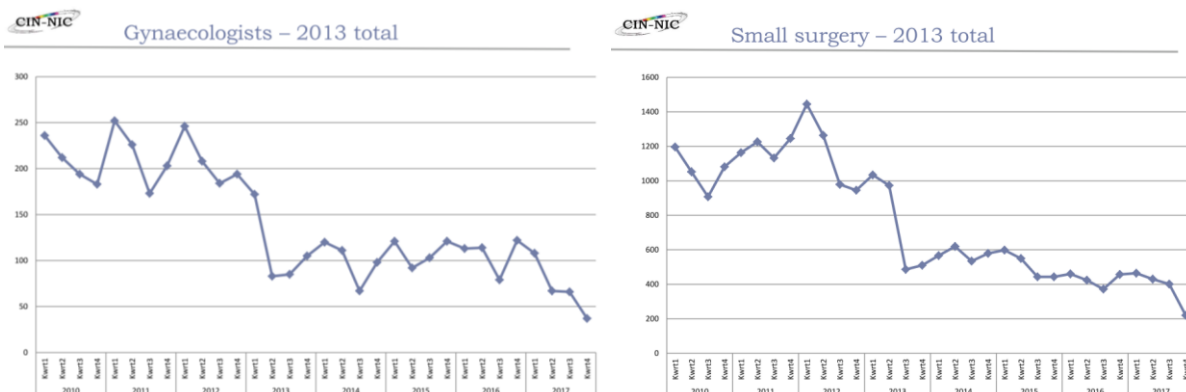
The National Intermutualist College (NIC-CIN) is a mutual insurance association, consisting of representatives from the 7 Belgian federations of health insurance funds.

In 2012, NIC-CIN reviewed their approach to handling cases of (presumption of) waste/abuse/fraud.

They evolved from an individual, often local, approach to a centralized data driven approach. Along with this change, they decided to put medical and legal advisors in the back-office and contact healthcare providers on an administrative base.

Outliers in this approach were defined as healthcare providers who were responsible for at least 50% of the expenditure of one or more reimbursement codes in their region. These outliers all got an individual letter confronting them with NIC-CIN findings but stating that these findings were based on the billing data, not on medical analysis (so called 'demedicalization of the billing data'). By his letter, the healthcare providers are confronted with their high profile in comparison with their colleagues and they are invited to explain and to justify their high consuming of medical acts. Furthermore they are informed about the fact they could be placed on monitoring in the future.

The first categories of caregivers contacted were gynaecologists, and doctors carrying out minor surgeries.



The answers received were analysed in the back office and processed by a multidisciplinary team (medical and legal advisors).

NIC-CIN noticed a much higher degree of response, less medical discussions and a real and long lasting influence on the expenditures focussed on.

Best practices in combatting member fraud in International Insurance, Steven Knox, Lead Fraud Investigator and ISIU Manager, AETNA International (UK)

Aetna group accounts 100 companies in the US and 800000 members worldwide.

Member frauds are systemic or opportunistic. Examples are:

- ✓ Amending Receipts
- ✓ Altering Claims forms based on altered invoices,
- ✓ Images and Reports taken from online sources
- ✓ Collusion
- ✓ Non Declaration
- ✓ Dual Claims
- ✓ Taking Out Policy Knowingly to Gain Cover for Treatment
- ✓ Membership Cards

Altered Invoices

The image shows several examples of altered documents. On the left, a list of handwritten numbers is shown, with some numbers crossed out and replaced. In the center, there is a receipt with a 'Grand Total' of 87308 yen. To the right, there is a receipt with a 'Grand Total' of 7308 yen, which is circled. Below the receipts, there is a small table with columns for 'PER (SE)' and 'Amount'.

PER (SE)	Amount
150.00	150.00
475.00	475.00
0.00	0.00
625.00	625.00
625.00	625.00
980.00	980.00

Some preventive measures have been implemented to avoid those cases happen, among which:

- Review of all of all reimbursement claims and invoices of more than 2500\$ amount: red flags
- Anti-fraud training: online training for members, workshop sessions,...
- Data analysis for multiple low amount claims

A concrete case study from Brazil is presented:

In 2016, the claims team referred a suspicious claim from a member in Brazil to the ISIU. The member supported the 20000\$ hospital admission with a handwritten invoice and documentation in Portuguese. By using local expertise it was noted that the documents were “unusual” – as if written by a non-native speaker. ISIU investigated the policy set up and referenced a previous systemic case from Argentina. This investigation matched the payee of the policy to a name which had previously been investigated for submitting fictitious claims. The Hospital was contacted thorough ISIUS’s 24 hour assistance team and confirmed no record of the member. The claim was declined and the policy cancelled.

Finally, Mr Knox emphasis that the ‘F’ word is not always what it may seem: AETNA use the ‘Fraud’ word only when they have 100% proof that a fraud has been committed and have enough evidence that would stand up in a court of law if challenged.

There are other variations such as

- Misinformed
- Misinterpreted
- Poor Administration & Accounting
- Forgetfulness
- Human Error

All of these are looked at in order to remain fair and unbiased when reviewing any referral.

Strategy to prioritize counter fraud investigations actions introduced by the Head of the Audit and counter fraud Directorate of the French national insurance fund, François Grandet, Deputy Head to the DACCREF, Cnam (France)

In France, total annual health insurance expenses amount 180 billion euros per year but there are various sources of abnormal spending. Furthermore, there are a lot of activities to be done by few people. Therefore, Cnam (national health insurance fund) must search for and grow in efficiency. Cnam has a gradual approach according to the situation, in order to moderate health spending: from information/communication (through phone calls for example), to anti-fraud when it is a dangerous practice or repeated fault/abuse that is observed after strengthened support.

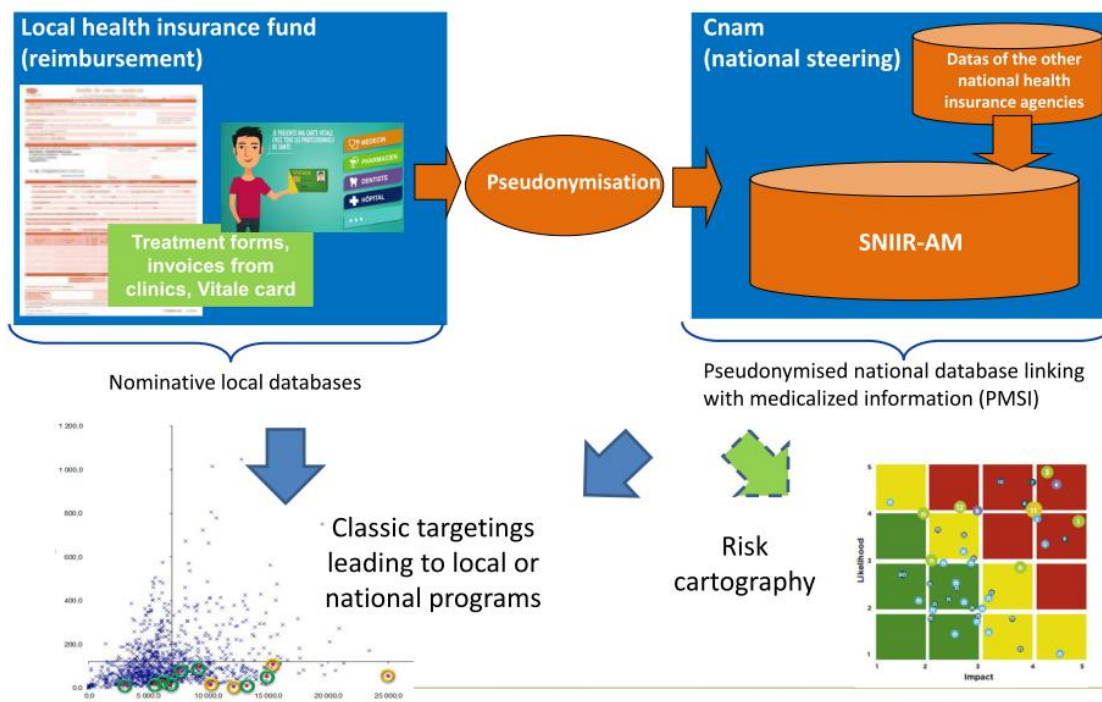
To tackle fraud, the direction prioritizes potential frauds with local and national databases. There is a prioritization among national programs. It also sets up risk cartography. Indeed, CNAM anti-fraud direction knows how to detect abnormal spending.

Through the cartography, the anti-fraud direction analyses and prioritizes the risks of fraud by category.

- 1) Approach by the spending
- 2) Fraud in hospitals and private hospitals
- 3) Fraud committed by insured people

The anti-fraud direction works with a multidisciplinary team of statisticians, economists, and practitioners. Moreover, when it is possible, it leads some benchmarks.

Prioritize potential frauds with database



Workshop Part III: Exchange of best practices in reducing Waste

State of Affairs of the project on Collection of data of meniscectomy (national incidence rates and strategies on overuse), Annelies Wouters, MD, NIHDI (Belgium)

In 2017 the National Health and Disability Insurance (NIHDI) of Belgium launched an evaluation project on efficiency in orthopedics.

The latest studies show no significant benefit of (arthroscopic) meniscectomy over exercise therapy in patients older than 50. However, the volume of meniscectomy procedures performed in this subpopulation remains high, especially in Belgium.

The NIHDI is interviewing orthopedic surgeons about their indications and circumstances of meniscectomy. By an international survey 'Meniscectomy: data collection of national incidence rates and strategies to prevent overconsumption', the NIHDI will gather reliable data and information. They will be able to position Belgium with regard to other industrialized countries and learn about strategies developed by other countries to reduce waste. Based on the available results, effective strategies to reduce waste in Belgium will be developed.

Figures of the data collection⁴ are presented:

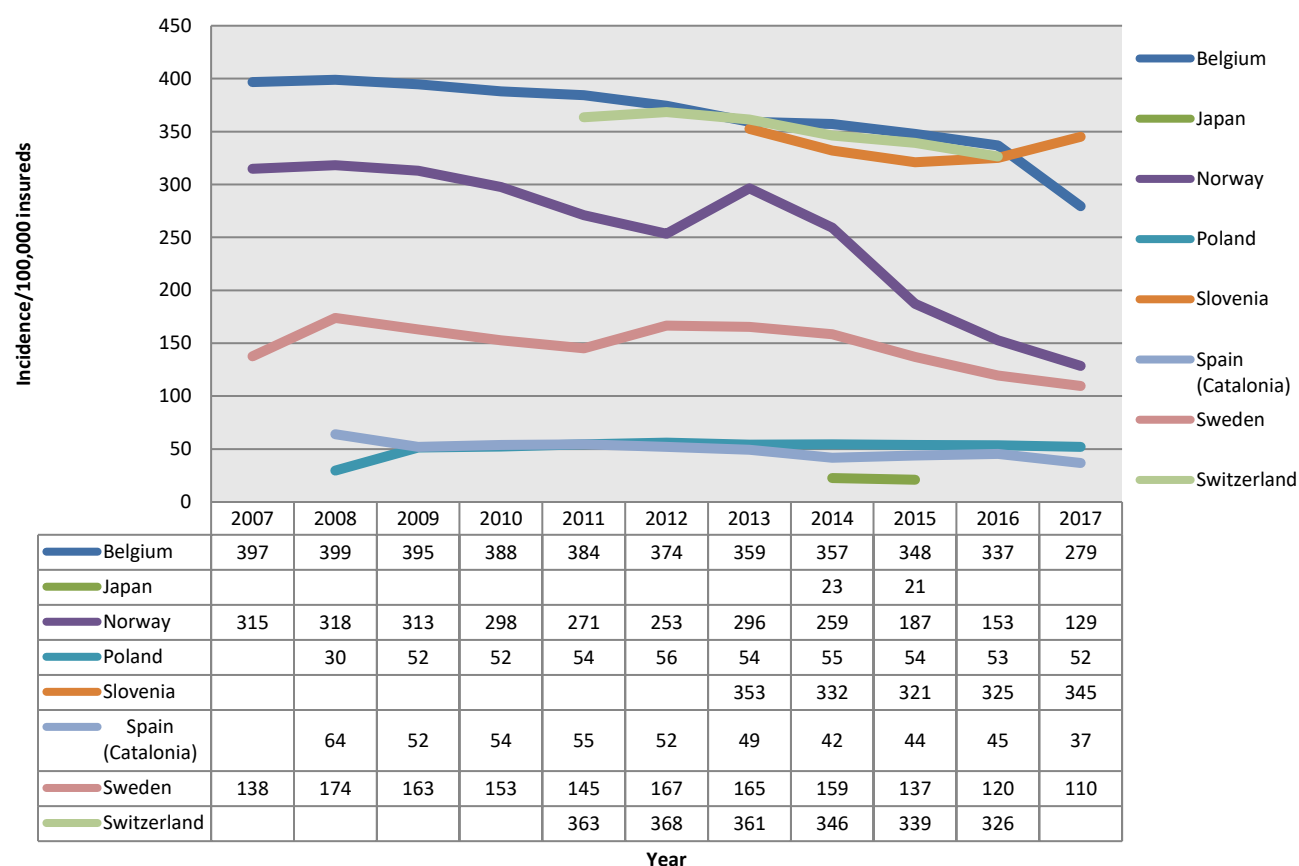


Figure: Results: Incidence

⁴ Updated figures (25 March 2019)

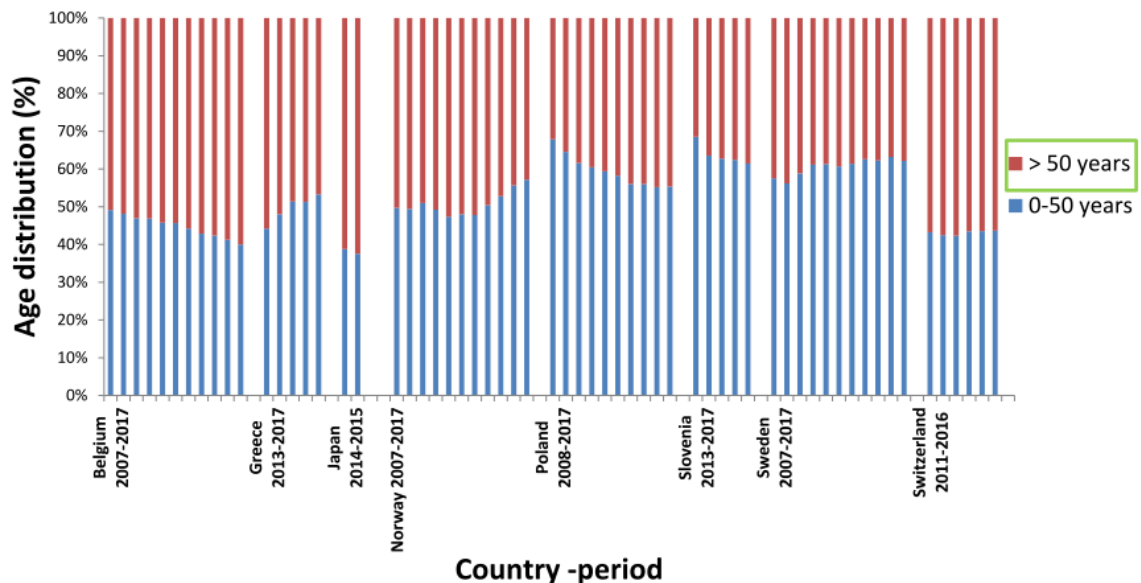


Figure: Results: Age distribution

Waste and lack of compliance in orthodontics in Norway, Anette Randeberg, Head of Department Reimbursement, and Ole Trapness, Head of Section at the Control Department, Helfo (Norway)

All Helfo departments are involved in countering fraud and waste in Norway. Helfo invested in a ICT policy – digital agenda (www.helsenorge.no) for insured people and healthcare professionals. 19 million visits are registered. 89% of refund claims from dentists are transmitted electronically. Helfo registered quite a high number of fraud cases in orthodontics care. In Norway, orthodontics care is performed by specialists and is free for children until they are 20 years old. For older patients, they are 3 levels of charge.

It appears that the number reimbursement claims is 75% higher in the western country than in the northern part. This is due to the fact that there is an unequal geographical access to orthodontics care. Helfo implemented a control of compliance in 2016-2017. It consists of a 7 step model: analysis, survey panel, workshops, unintentional errors, adaptation to laws.

The control revealed that most dentists delegate some activities to dental assistants. Moreover, public dentists often send patients to private orthodontists.

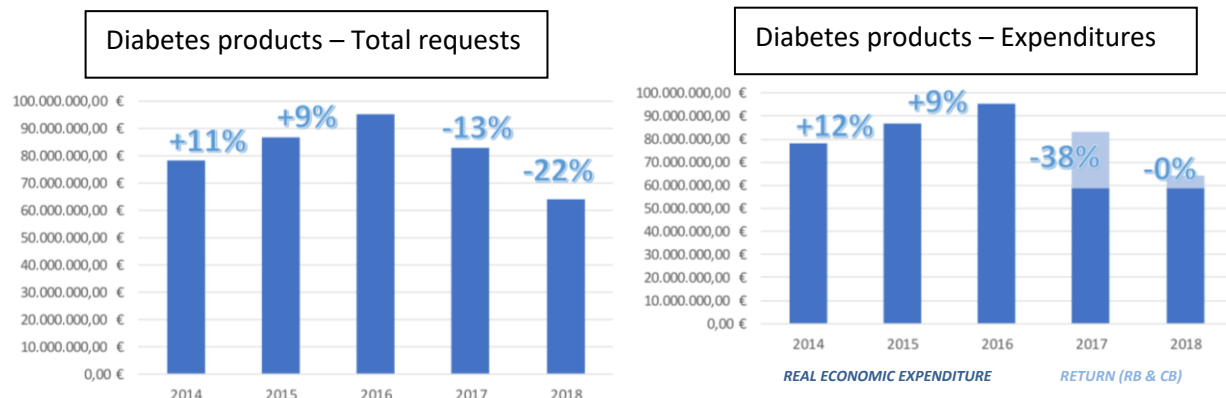
Helfo was allocated an extra amount of the national budget in order to control dentists. It also launched a “Choosing wisely” campaign and a Workshop on waste is planned to be organized focusing on three healthcare professional groups among which dentists. The purpose of the workshop is to classify some types of waste and choose relevant measures. For the 2019-2022 period, Helfo set up strategic initiatives: prioritize efforts on prevention of waste, and improvement of automatic controls in the case handling system

Finally, Helfo is focusing on errors and some abuse according to EHFCN typology matrix.

The Medical Devices Registry of EOPYY, Maria Panousopoulou, Head of Medical Devices Department, Directorate of Strategic Planning EOPYY (Greece)

In Greece, a new procedure for the reimbursement of medical devices and nutrition products (FSMPs) has been implemented. The former procedure was long, the patients have to prepaid, and there was no control of the quality of the goods.

New contracts have been concluded which resulted in benefits for EOPYY. Expenditures declined, not only because of the decrease in the number of requests, but also because of the fall in prices and the price ceilings by application. Authorities pay now directly to companies, there is a goods trajectory from manufacture to patient, barcodes are introduced in order no one can obtain the same product twice, and pricing and reimbursement policy of the medical devices and FSMPs are established in a common basis.



Optimum Allocation of Resources, Spiros Goulas, Head of Operational Planning Department & Planning of Development Projects, Directorate of Strategic Planning

EOPYY is a buyer of healthcare services for 8,7 million insured people (out of 10,7 million inhabitants in Greece). It is also an assessor of quality and safety. EOPYY covers healthcare provided in public and private sectors. Its revenues come from social contributions.

The Ministry of Health allocates a closed budget to each healthcare category (since 2012, there has been a category dedicated to drugs). In total, there is a closed budget of 1.442.000.000 € for 12 major categories, and 31 subcategories.

Procedures that help in the plan of better allocation of resources are:

- 1) **Auditing and Final Clearance Procedure – 1st level control of expenditures** (Started in March 2016): Billing for services not rendered, upcoding of services and items, duplicate claims excessive or unnecessary services.
By preventing the fraud, a better aspect of the real needs for healthcare is received, so recourses could be allocated according to the needs.
- 2) **Contracts and registry for the providers of FSMPs and Medical Devices** (Started since 2017). Data are collected about the expenditure of the products, the number of prescriptions, the doctor who prescribes, the disease for which data are intended to be used, the price of the product, the legal market authorizations of the product and the distributor of the product in Greece.

This information will help us determine the real needs in terms of recourses and allocate the budget accordingly.

- 3) **Registries of patients:** hepatitis C, chronic myelogenous leukemia, peritoneal dialysis treatment, diabetes.

Registries provide a clear picture about the actual number of patients that need a certain health service, so it becomes easier to set budgets for these health services.

The final outcome of an ideal allocation of resources should provide medical efficacy, economic efficiency and social equality.

There are 2 ongoing projects based on the registries: allocation based on geographical inequalities and allocation based on disease.

General Assembly of EHFCN



Day 1 of the Open House ended with an Extra-Ordinary Session of the General Assembly.

Mrs Marta Maria de Sousa Henriques Gonçalves was elected new Treasurer of the Executive Committee of EHFCN. Her mandate will start on 01/01/2019 until 31/12/2021. Congratulations!

Day 2

Day Welcome - Kalliopi Koubi, Director of International Insurance Relations Division, EOPYY (Greece)

Mrs Koubi stresses the importance of data exchange and collaboration at European level by working on and implementing directives in healthcare.

New trends in Healthcare fraud - Georgios Spiridis, General Inspector of YPEDYFKA-EOPYY (Greece)

Mr Spiridis indicates that we are dealing with problems in a context of

- different providers (cfr. the implementation of registries)
- different types of behavior
- a lot of expenses and waste

Therefore it is important that we all know the same by acquiring and analyzing data in a scientific way.

The role of Health and Welfare Inspectors Body (SEYYP) against fraud and corruption in Greece - Stavros Evangelatos, General Inspector Health and Welfare Inspectors (Greece)

The Greek Health and Welfare Inspectors Body (SEYYP) is an independent authority established in 2001 and falls under the jurisdiction of the Ministry of Health. It is responsible for conducting performance audits of health and welfare services in both the public and private sector. Also water bottling factories are under inspection of the SEYYP.

The objectives of SEYYP are divers, namely improving the productivity, effectiveness and quality of the services, elimination of maladministration and corruption, protection of citizens health and property from abusive ways.

Following a request from the Minister of Health or the Minister of Justice, the inspectors of SEYYP perform inspections in 4 sectors (pharmaceutical sector, administrative and financial sector, public health and psychic health sector, welfare sector).

At the exercise of their competences, the inspectors have by law the rights and duties of judicial investigators.

After each inspection a report is drafted stating the findings and conclusions of the inspection, as well improvement proposals for the inspected institute or proposals for modification of the existing legal frame. The report is not without obligation. A total of 1192 inspection reports were drafted during the period 2013-2017.

So far, SEYYP identified different types of corruption in the health sector: bribery in contracts, laundering, illicit enrichment, and influence.

Some important inspection cases are listed – the list is not exhaustive:

- Violation of priorities in waiting lists in public hospitals.
- Collaboration of public hospitals with private clinics and diagnostic institutes with invoices 10 times more expensive.

- Operations of children carried out by other than paediatric specialized surgeons.
- Overpricing of radiopharmaceuticals, a formulation was sold to a public hospital at 1000 €/flacon, while the same formulation is sold to private clinics for 390-530 € by flacon.
- Huge quantities of expired vaccines and materials corresponding to a significant amount of money spent in a state warehouse of drugs and sanitary material. There was no usual provision in the contract foreseen to return and replace the products before their expiration.
- Very poor living conditions of the elderly and significant mismanagement problems in a nursing home.
- Illegal private nursing services.
- ...

Francesco Macchia, Ordinary Member of EHFCN, concludes it is indeed a long list of waste and a lot of inspections have been done in a short time.

Panel on CORRUPTION : Experiences from the fight against Corruption

Mr Macchia, highlights that attention has to be paid to the fact that waste comes mainly from corruption. This panel should invite the audience to share innovative approaches and to give input for the upcoming guidelines and recommendation that EHFCN wants to design and launch in 2019 for members and experts.



The Contribution of the Hellenic Court Of Audit to the fight against Corruption, Androniki Theotokatou, President of the Court of Audit (Greece)

According to a recent study published by the European Parliament Research Service, corruption in general is a universal problem that significantly affects economic growth, undermines the foundations of democracy and generally weaken the concept of social justice.

The creation of control mechanisms to eradicate corruption is therefore inevitable. Common principles of all the controls being carried out is to respect the principle of legality, to combat maladministration, to ensure transparency, to improve the quality of service for citizens and to make public services more efficient.

The Court of Auditors has a supervisory role and implement national audits. Its competence pertains mainly to auditing the expenditure of the State/local authorities, the contracts of large financial value made by the State/local authorities and the accounts of public accounting officers/local authorities. In this way, the institution acts as a lever to prevent corruption and strengthening sound financial management. Its founding coincides with the establishment of the Greek State (1833). The fact that its operation constantly for 185 years is decisive and uninterrupted, confirms the necessity of its existence.

It is important to inspect fraud mechanisms and to keep in mind that before an expense is done, an order is done. The Court has the almost exclusive right to issue recovery orders for money, if deficit or damage arises, in the financial management of the State/local government, ensuring sound financial management. The repayment of the public money that was wasted is the completion of the control process and the long-term requirement of citizens, who only partially benefit from the imposition of criminal sanctions against the perpetrators.

A recently published report of the Ministry of Finance states that the size of the underground economy in Greece is relatively high compared to the other OECD developed countries but it is decreasing thanks to the reforms implemented (from 28,2% in 2003 to 22,4% of GDP in 2015).

Corruption is even more than a financial loss; it is also a loss in confidence. Combating corruption is important for maintaining and restoring citizens' trust towards the state, the smooth and unimpeded functioning of institutions, and business development in a country. But countries are running after corruption.

Regarding the healthcare sector, this sector is particularly vulnerable to corruption: bribery in contracts, abuse of power. Moreover, deficiencies like malpractice, mismanagement,... leave free space or the capacity required for its manifestation. In Greece, corruption in the healthcare sector has grown after the economic crisis as a result of maximizing the need for public healthcare and reducing government spending on health. The lack of funding for this sector intensifies the phenomenon and highlights the importance of efficient allocation of resources. Reforms like competitions (Regulation of public procurement), transparency, achievement of maximum economic outcomes were implemented for reducing or eliminating the phenomenon.

In this endeavor, the Court of Auditors is assisting not only in the health sector but in all public services. The aim of our Court is to act as an adjunct to any new improvement in public administration. It tries to work collaboratively, protectively and educationally, wherever and whenever it is needed. However, this process is not only aimed at combating corruption, but mainly in the cultivation of a culture which presumes respect for legitimacy and aims to ensure the economy.

The President of Hellenic Court of Audits (Mrs Theotokatou) concludes that the Court realizes that its success depends on the audit and that each kind of corruption means loss of money for the society.

Long waiting lists create opportunities for corruption: how to prevent it?, Carlo Milli, Administrative Director, Pisa University Hospital (Italy)

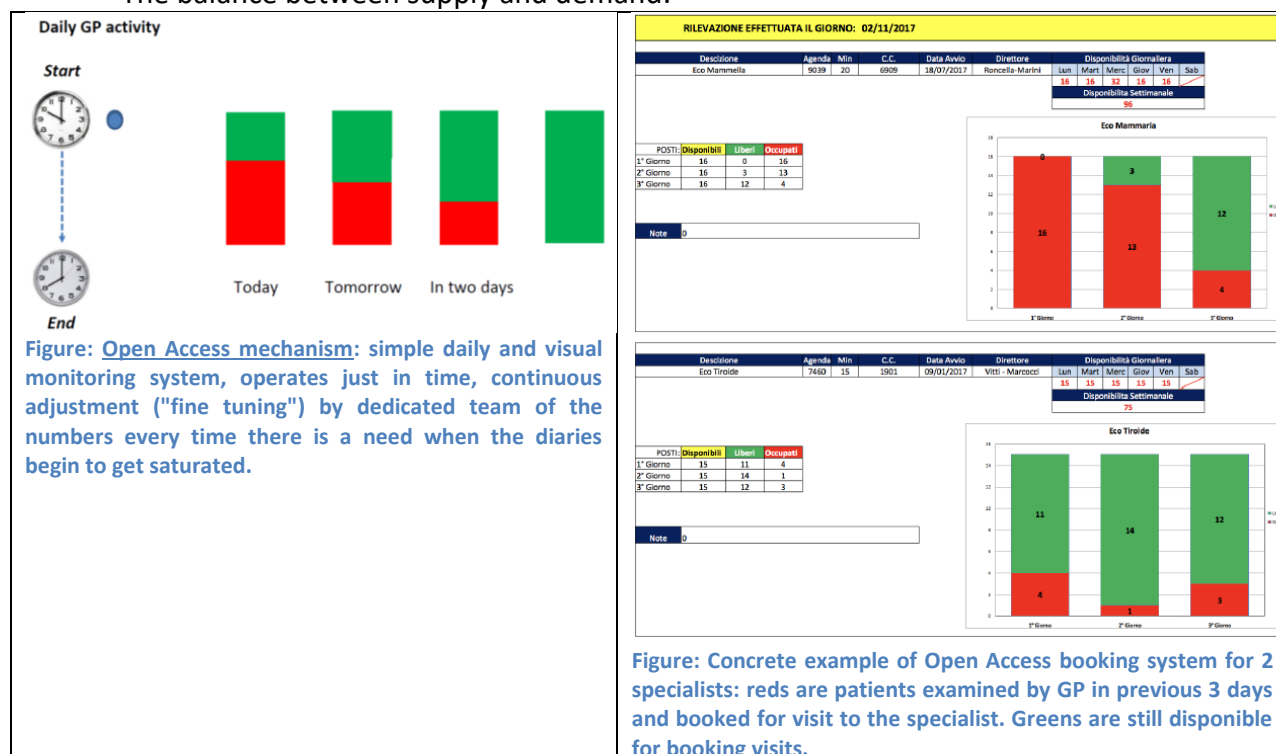
Long waiting lists can lead to corruption by the power abuse in order to allow overtaking waiting list for private and personal advantage, to favor private professionals' activities. There was a concrete fraud case 2 years ago whereby a doctor used waiting lists to move patients to private hospitals which led to the reduction of quality and value for the patient.

A new organizational model, "Open Access", to streamline waiting lists for the first visits for patients in the Pisa area has been successfully adopted, about 3 years ago. It is a planning, booking and monitoring system developed at Pisa University Hospital.

Currently there are 13 lines of Open access activated and others will be added during the year: cardiological/neurological/ophthalmologic/otorhinolaryngology/dermatological examination; breast/abdominal/thyroid/other ultrasound; thoracic/abdominal CT.

The success of Open Access is declared by among others:

- The separation of the flows of the first visits (with a diagnostic question) from the control visits (the so-called "follow-up") with 2 different planning/booking and monitoring pathways:
 - o For the first visits: a daily monitoring of the saturation of the diaries over a period of three days and the guarantee of obtaining a reservation no later than the third after visit of general practitioner (GP).
 - o For routine and follow-up visits: scheduling of services on an annual agenda, with daily scrolling, in which a free one is added to each day consumed. For a patient who is already in charge of the hospital, a specialist is also able to book directly a control visit at the end of the consultation, a prescription by a GP is not necessary anymore.
- The exact knowledge of the monthly demand expressed by general practitioners (GP) for a given service (e.g.: how many cardiological visits per month do family doctors prescribe?).
- The balance between supply and demand.



Mr Milli finishes with the message that “Open Access” has learned that simplicity is needed for managing complexity. Facing fraud and waste also needs disruptive actions.

The role of Statistics in the fight against corruption and fraud, Athanasios Sachlas, Adjunct Lecturer at the University of Piraeus (Greece)

Mr Sachlas underlines the importance of big data analysis. Big data coming from different sources are the most effective tool to fight against fraud and corruption. The challenge is not getting the data but using them.

Statistics is a science dealing with the collection, organization, analysis, interpretation and presentation of data. It is categorized into:

- *descriptive statistics ('describe')*: uses the data to provide descriptions of the population, either through numerical calculations or graphs or tables; and
- *inferential statistics ('try to take some conclusions')*: makes inferences and predictions about a population based on a sample of data taken from the population in question.

After explaining some basic statistical concepts like population, sample, parameter, distribution,... Mr Sachlas goes deeper in detail about the outlier concept.

An outlier is an observation that lies an abnormal distance from other values in a random sample from a population. Before abnormal observations can be singled out, it is necessary to characterize normal observations. A box plot is a useful graphical instrument for visualizing the behavior of the data and to identify outliers.

For instance, 10 indicators were defined for the monitoring of private pharmacies, such as expenditure for drugs per private pharmacy, mean number of prescriptions per patient,...

Example of analysis of the indicator ‘mean number of prescriptions per patient’:

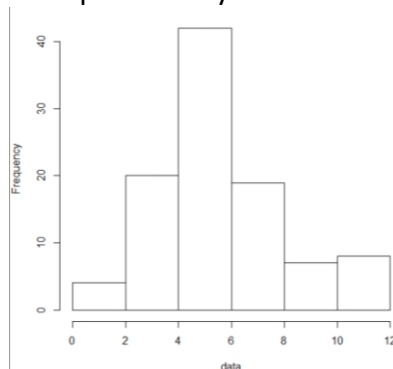


Figure: Histogram - distribution

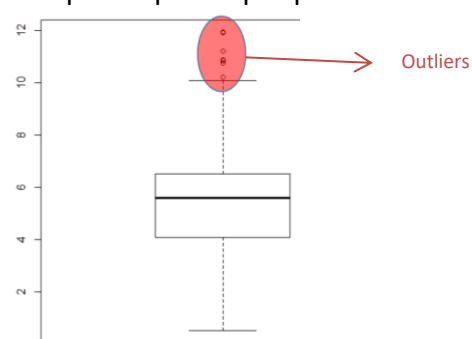


Figure: Boxplot

Panel on FRAUD : Data Analytics & Data Protection

Mr Bersimis introduces that data themselves are not the problem BUT properly analyze them is an important issue.

Issues of application of the General Data Protection Regulation in the framework of the operation of EOPYY - Konstantinos Menoudakos, President of HDPA, Honorary President of the Hellenic Council of State (Greece)

Mr Menoudakos gives us a short introduction in the legal part of big data and the importance of protection of personal data within the framework of operations and according GDPR. He also refers to the freedom of natural persons. He advises to make a risk assessment and to implement necessary measurements like new tools and procedures.

Discovery of New Fraud patterns using Data Analytics - Ekin Tahir, Brandon Dee Roberts Professor and Assistant Professor of Quantitative Methods in McCoy College of Business, Texas State University (USA)

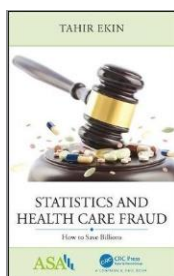
Mr Tahir emphasizes the importance of healthcare audits and statistics to detect and counter fraud cases. Statistics and analytics help auditors in their investigations.

Descriptive statistics reveal billing behaviors and find providers that are different than the standard.

Medical claims data are dynamic, heterogeneous, skewed and multi-layered. Data mining is used for analyzing them. There are two data mining methods:

- Supervised: predictions and classification
- Unsupervised: are mainly used for initial screening: discovery of new and hidden patterns among providers/procedures/patients, description of billing behaviors and find providers that are outliers – outliers may be candidates for investigation

To counter fraud in an optimal way, it is necessary to have a multidisciplinary integrated team (of health professionals, data analysts and fraud examiners) dedicated to it.



He announces the soon publication of his book 'Statistics and Health Care Fraud: How to Save Billions.'

A quick demonstration is still given of the

- Latent Dirichlet Allocation (LDA) method for fraud detection, and
- Lorenz (concentration) function to detect outliers and allocate some red flags.

Machine Learning for Fighting and Preventing Fraud and Corruption, Vassilis Plagiannakos, Associate Professor & Head of Department of Computer Science and Biomedical Informatics, University of Thessaly (Greece)

The race for artificial intelligence (AI) is going on. Tech giants like Microsoft have invested much more the last 10 years in AI. Also other industries like oil/energy, financial services, conglomerates also invest in AI.

Machine learning is a field of linking computer science and artificial intelligence. It is necessary to feed the computer with data and information (of observations and real-world interactions) in order to make the computer behave like a human being. Machine learning allows to make predictions based on data. However, it is different from fraud analysis. Data mining plays a role to do so.

Data mining is at the intersection of machine learning, statistics and database systems. It aims to discover patterns, extract information from a large data set and transform it into a comprehensible structure for further use.

Cybercrime in Medical Area - Georgios Papaprodromou, Police Colonel, Forensic Document Examiner, Director of Hellenic Police HQ Cybercrime Division (Greece)

Cybercrime is defined as crime committed in cyberspace, which not only involves internet but also interconnect like mobiles,... It is powerful crime with a possible impact on environment, economics,... Furthermore, in cyberspace, there are no borders applicable.



The mission of the Cyber Crime Division includes the prevention, investigation and suppression of crime and antisocial behavior, committed through the Internet or other electronic media. The Cyber Crime Division consists of five departments which cover the whole range of users' online protection and cyber security:

- 1) Administrative Support and Information Management
- 2) Innovative Actions and Strategy

- 3) Electronic and Telephone Communication Security and Protection of Software and Intellectual Property Rights
- 4) Minors Internet Protection and Digital Investigation
- 5) Special Cases and Internet Economic Crimes Prosecution

The role of the Cybercrime Division has been increased thanks to cooperation with other Hellenic institutions and European (or more) organizations and to a strengthened legislation.

Mr Papaprodromou explicitly warns for the danger to buy medicines on line.

Panel on WASTE: Optimal Allocation of Resources

Delivering efficient healthcare services in times of fiscal sustainability challenges, Per Eckefeldt, Department Economic and Financial Affairs, European Commission
Every 3 years, the European Commission reports on the evolution of the population.

* **The ageing challenge:** The projections show that the European Union (EU) population is turning increasingly grey and is also shrinking because of a low birth rate.

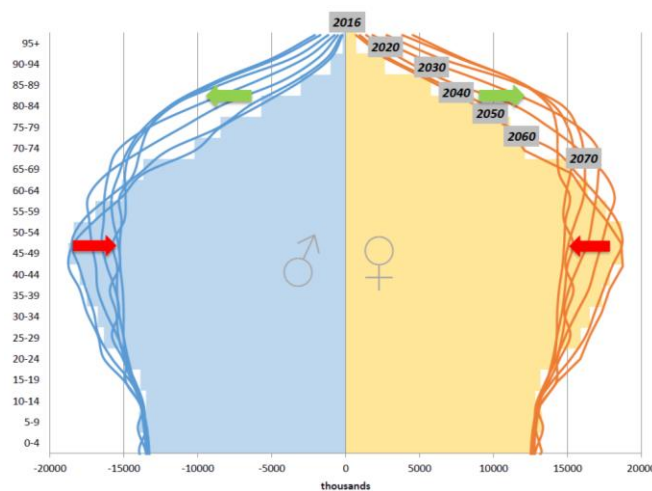


Figure: Population projections EU

* **Fiscal impact of ageing on future public healthcare expenditure:**

Health expenditures not only by population. Nowadays, there are better treatments and options, but they are also more costly. Whereas demographic trend played no much role in health spending in the past, it will play a more prominent role in the future (baby boom generation).

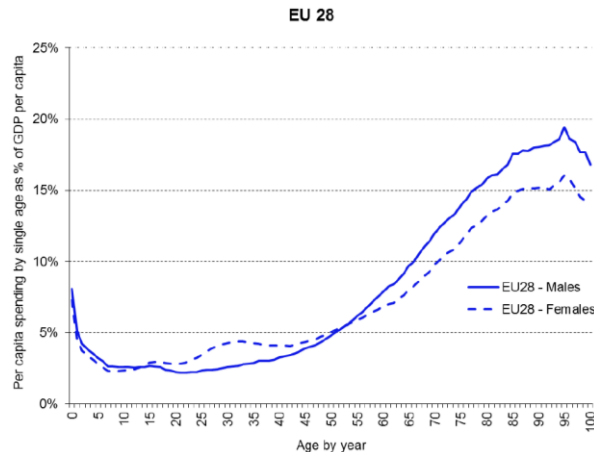


Figure: Healthcare costs increase with the age

However, non-demographic factors are likely to continue of being of crucial importance also in the future.

*** Policy options on how to increase efficiency in healthcare services delivery:**

Mr Eckefeldt mentions the joint report of healthcare and long term care systems and fiscal sustainability prepared jointly with the EU members.

It is necessary to improve the governance of healthcare systems and to monitor their performance. Other measures to optimize allocations are to improve the efficiency and affordability of drugs.

Prior Authorization of Pharmaceuticals: Towards a transparent and user friendly electronic system, Chara Kani, Head of Medicines Administration Planning & Monitoring, Directorate of Medicines, EOPYY (Greece)

Mrs Kani introduces an electronic prior authorization system implemented in Greece for pharmaceutical products since 01 August 2018.

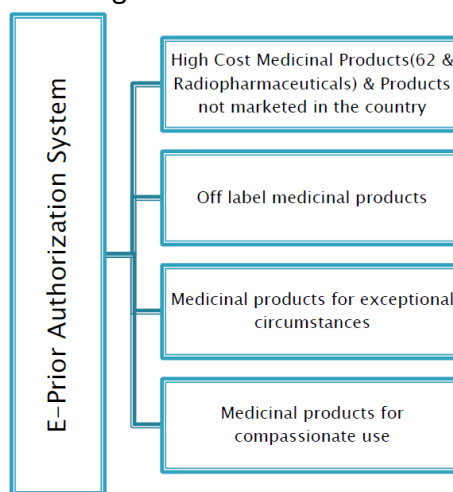


Figure: Categories of applications.

It is used to ensure that a medicinal product is administered to a specific patient population, and also to monitor the prescription of high cost medicinal products.

The advantages of the system are multiple:

- It simplifies the procedure of prior authorization.
- Prescribing physicians use it. So do inspectors committed by the Ministry of Health.
- It allows a better decision making.
- Patients do not need to go and see their doctor anymore in some cases.
- It also allows a better codification.
- ...

Foreseen future improvements of the system are the development of KPIs, the inclusion of treatment results,...

The role of Statistics in optimizing the allocation of resources and eliminating waste - Sotirios Bersimis, Assistant Professor UNIPI, President of EOPYY, President of EHFCN

In 2015, the Greek economic crisis reached a low point with a debt of 2 billion €. The State was not able anymore to pay patients, companies,...

The solution for the reduction of arrears could be collecting more money. However, this money had to come from contributions and there was a high level of unemployment.

The only option was to eliminate waste by giving optimum budgets. To meet the question of 'how' to optimize the allocation of resources, it is crucial to define what is optimum. For this, we use basic notions of statistics, especially the concept prevalence.

Prevalence is the proportion of particular population found to be affected by a medical condition.

Prevalence estimates are required among others in service planning and resource allocation for an appropriate response in terms of treatment and other measures to reduce.

There are 3 types of budgeting:

- Top-down: you are given a closed budget
- Bottom-up: you say what you need, prediction
- Negotiated

To create close budgets for diagnostic tests per disease based on target populations estimated by the prevalence and the referral regulations.

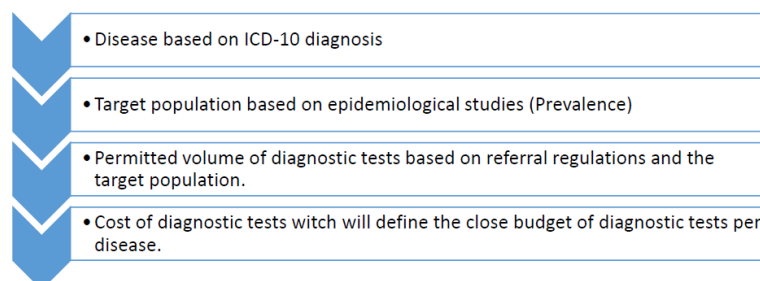


Figure: Example: application in diagnostics

The long-term objective is to connect all the provided medical services with the disease (ICD-10). Beside the control of expenditures, this model also will allow the transaction of economic resources from 1 medical service to another.

Project Proposals by George Paliouras and Sotiris Bersimis: *The EU Registry for Medical Devices and The EU Biosurveillance System*

A national registry for medical devices has been established in Greece. The proposal is to expand this registry to other countries with federated access to national registries, ensuring privacy and security.

The EU registry would be a global observatory safety and vigilance of products. It also would gather information about prices, allowing countries to put the benchmark for the final price for some products.

During an interactive discussion, a number of remarks and concerns are expressed:

- Portugal:
 - Difference between public and private settings
 - Difference between a device and technology: not looking only to the cost of the device, but also looking for what the device is used
 - Interference with decision of companies to enter or not to enter a market
- United Kingdom (UK):
 - Risk that manufacturers will set their prices high(er)

Closing of the Open House

On behalf of EHFCN, Mr Tom Verdonck, Vice-President of EHFCN, thanks Mr Bersimis and Mrs Dimitra Lingri and the whole EOPYY-team for the excellent organization of the EHFCN Open House hosted by EOPYY in Athens (Greece) on 18 and 19 October 2018.

Mr Verdonck concludes there were a lot of positive reactions during the open house event during which new trends about corruption, fraud and waste have been presented.

Mr Bersimis thanks everyone for their presence and active participation at the occasion during the 2 filled days.



Mrs De Wulf emphasizes and is very grateful that excellent ideas and innovative approaches have been shared and highlighted, giving the opportunity to proceed to collaborate with members and strong partners to tackle fraud, waste and corruption in healthcare in an efficient and effective way.



Day 3: 20 October 2018

The Statistics Lab of the University of Piraeus, organized a Training Day about Data Mining en Management. Several speakers from different (Greek and foreign) universities went into more detail on some statistical tools and machine learning techniques used in the fight against fraud/corruption and waste in healthcare.

Save the dates!

A. EHFCN Open House

The next EHFCN Open House will be hosted by the Dutch Healthcare Authority (NZA) in **May-June 2019**, in Utrecht (The Netherlands). It will be an interactive Open House with inspiring new methods and ideas to share.



Website of the host: <https://www.nza.nl/>

B. International EHFCN Conference



The 13th International EHFCN Conference will be hosted by GKV Spitzenverband at their premises in Berlin (Germany) on Monday **18 November** and Tuesday **19 November 2019**.

For more information on the host: <https://www.gkv-spitzenverband.de/english/english.jsp>

More information?

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The European Healthcare Fraud and Corruption Network (EHFCN) is an international non-profit association formally established in 2005 under Belgian Law. Its main goal is to combat fraud, corruption and waste within the healthcare sector. The Network is membership-based and the 20 members (2018) from 13 European countries represent public and private healthcare insurers, health financiers and payers who all work on the reduction and prevention of fraud, waste and corruption in the healthcare sector as their core business or as part of their mission. The aim of the EHFCN is to improve European healthcare systems by reducing losses due to fraud, waste and corruption. Its objective is to help members to become more efficient and effective in their work of preventing, detecting, investigating, sanctioning and redressing healthcare fraud, waste and corruption, with the ultimate goal of preventing from money being wasted and returning money to healthcare services for the benefit of every patient. EHFCN provides members with high-quality information, tools, training, global links and access to professional consultancy services. It also promotes the sharing of best practices, collaboration, bilateral agreements and the development of common working standards.

EHFCN Powerhouse

<https://ehfcn-powerhouse.org/welcome>

The EHFCN Powerhouse is the online communication platform for EHFCN members. It aims to connect with EHFCN members from all over the world. As members are geographically spread, it offers a business room in the cloud on a continuous basis. The online platform allows to: connect with professionals, share knowledge, ideas and best practices and contribute to counter fraud, waste and corruption in healthcare. You can join us to connect with our Experts by sending a request to: office@ehfcn.org.