



Implementation of ePrescription in Greece

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Healthcare in Greece

Population:

approximately 10 million

Health Expenditure:

2009: Total health expenditure ~23.1 billion (10% GDP)

2013: Total health expenditure ~ 16 billion (8% GDP)

Pharmaceuticals expenditure:

2009: ~ 5.8 billion (2.2 % GDP)

2013: ~ 2.5 billion (1% GDP)

Health System Structure:

Public Sector

97 Hospitals, ~37.000 beds, 1700 Specialist Units

204 Health Centers (HC, PHC)

7 regional health authorities (YPE)

Private Sector

184 Clinics, ~16.800 beds

3527 Diagnostic Centers



Total number of MDs: ~ 66.000
GPs: ~ 3.000

Latest reform - Primary Healthcare:
HC + GPs + other MDs

Healthcare in Greece



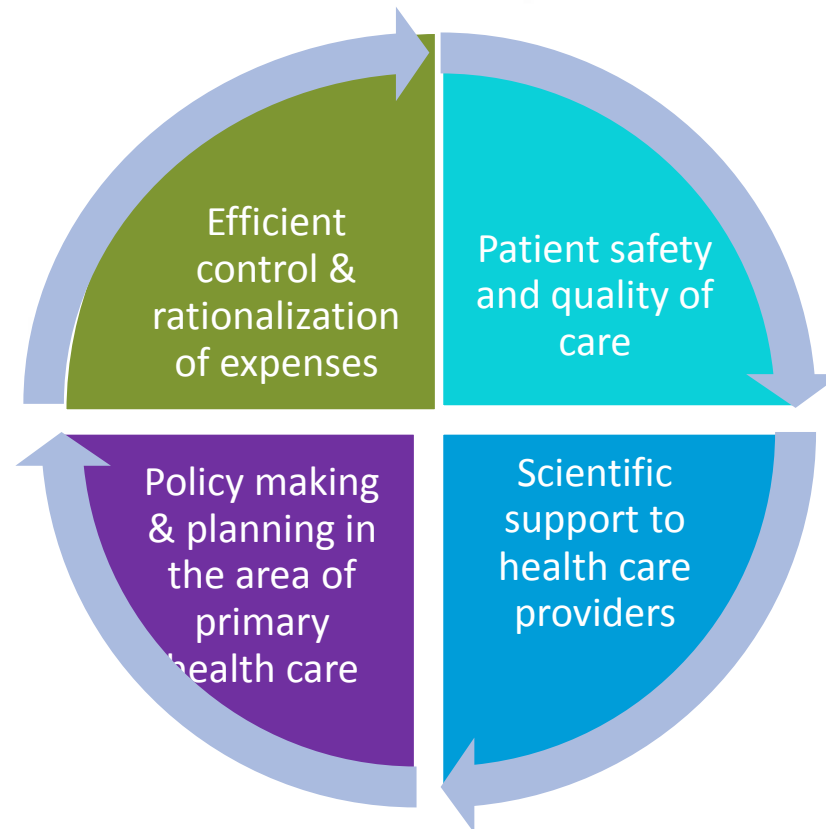
eHealth services

- E-Prescription and e-referrals
- Business Intelligence – ESY.net
- DRGs

The Greek ePrescription System

ePrescription: the most important eGov application to eHealth has been installed and operated at IDIKA S.A e-government center for social security services, overseen by the Ministry of Labour, Social Security & Welfare.

Objectives



The Greek ePrescription System

2010

Pilot Implementation to one Social Security Fund (Self Employed Workers Insurance Organization, OAEE)

- 9.500 pharmacies
- 4.100 doctors
- 8.000 eprescriptions per month

2014

Establishment of a unique eprescription system including medicines prescriptions and medical act referrals

- 11.000 (98%) pharmacies
- 41.000 (90%) doctors
- 6.000.000 (98,4%) eprescriptions per month
- 1.500.00 (92%) diagnostic referrals per month

The Greek ePrescription System

Main Characteristics

- A stable nationwide ePrescription system accessible from authorized users only (physicians and pharmacists)
- High level of coverage and penetration of ePrescription only in 3 years operation
- Doctors generate prescriptions, that contain all necessary info, e.g.:
 - ✓ patient's social security number
 - ✓ diagnosis (encoded by ICD-10)
 - ✓ medicines (quantity, dosage)
 - ✓ patient's participation share of payment of each drug (0%, 15%, 25%)
- Help: Help prevent medical errors
- know: which doctor prescribed... to which patient... for what reason... which drug (cost , box no, pharmacy)
- Provide: Provide a tool for planning / effective control & rationalization of expenses / transparency
- One of the biggest national applications (users/transactions)

The Greek ePrescription System

Operational Characteristics (1/2)

Integration with National Registry of Medical Practitioners

Integration with National Registry of Pharmacists

Integration with National Registry of Drugs (includes regulated Pricelist)

Integration with National Social Security Registry (AMKA)

Integration with Health Expenditure Submission System (e-ΔΑΠΥ)

ICD-10-based Diagnostic Information

Active substance-based medication selection

Support for Generic Medicines/Drugs

ePSOS Compliance (Pilot Phase)

Accountability & Monitoring of Prescription /Diagnostic Exams Activities:

- **Who prescribes ... What medication /examination to Whom, for What and When**
- **Where and When do prescriptions get executed**
- **Control of Prescribing expenditure per doctor**
- **1 euro cost per prescription**

The Greek ePrescription System

Operational Characteristics (2/2)

- The system interconnects with pharmacies information systems through an interoperability framework (CDA based RESTFul API), in order to automatically dispense electronic and hand written prescriptions through the local pharmacy information systems.
The interoperability framework is to be expanded to e-prescriptions via third party medical software (DIS, HIS, etc).
- The system has integrated **prescription rules**:
 - ✓ prescribing according to active substance
 - ✓ ICD-10
 - ✓ prescription guidelines
 - ✓ Up to 80% of the total prescription value per doctor (monthly cost of prescriptions per doctor does not exceed 80% of the 2013 average prescriptions expenditure per doctor with the exemption of hospital doctors-severe diseases)
 - ✓ 1 euro cost per prescription paid by beneficiary/patient
 - ✓ Promotes prescription of generics
- A unique e prescription system is currently fully operational including medicines prescriptions and **medical act referrals**

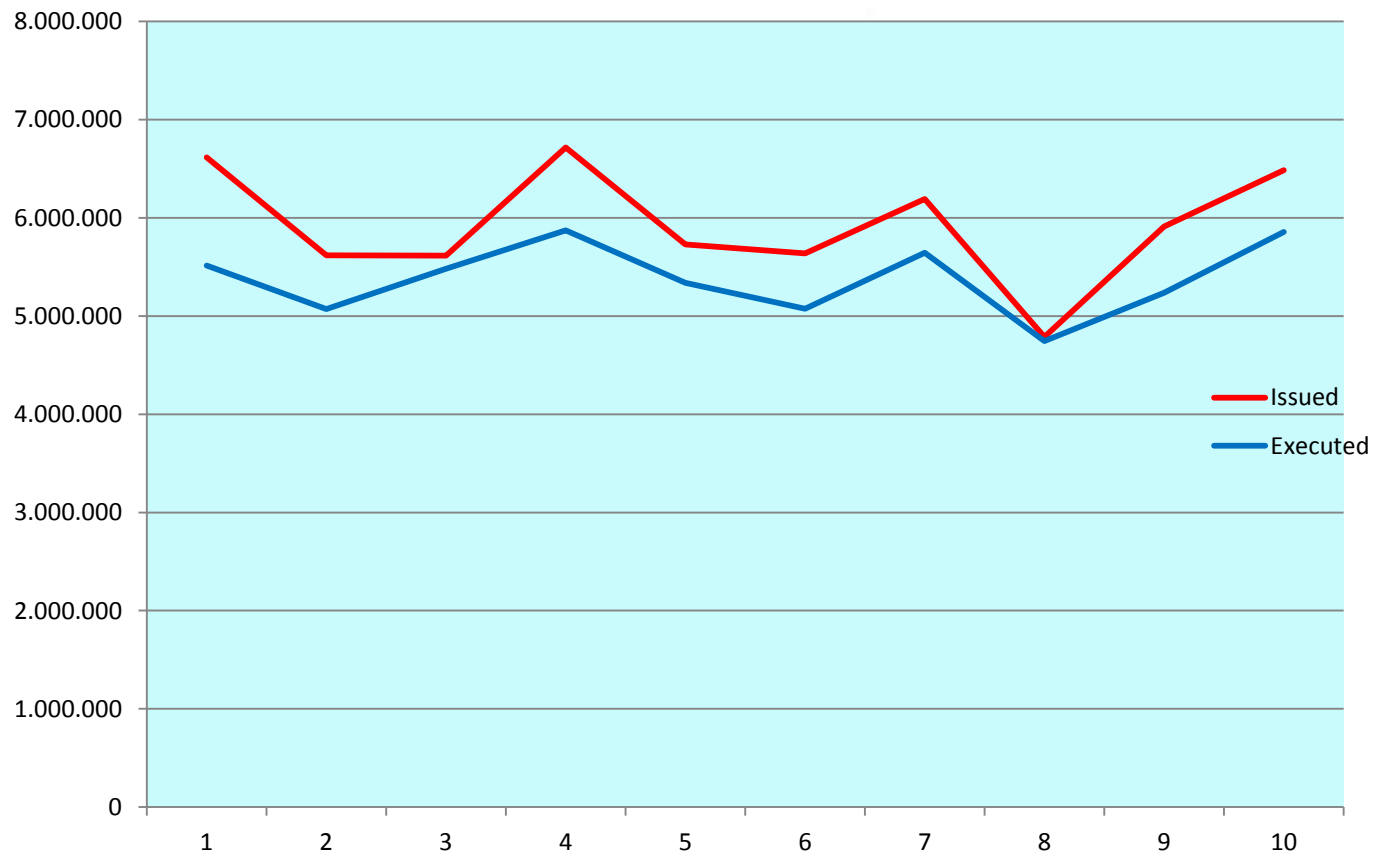
The Greek ePrescription System

The Greek ePrescription interoperability framework

- Based on new architecture paradigms (RESTful API)
- Simple to implement
- 7500 pharmacies are connected to the central eP system via this interoperability framework
- 8 different Pharmacy Information Systems
- ~200.000 prescriptions dispensed every day
- Drug List updates online via the API
- Medication authenticity validated online via the API
- Prescription protocols information transferred via the API
- It Can process epSOS friendly prescriptions for cross border healthcare
- It is based on international standards (HL7 CDA)
- It has enhanced security features (IHE ATNA, RFC 2104)
- It is designed to operate with multiple repositories of data
- It is expandable to other e-health scenarios (patient summary, e-prescription, e-referral, etc.)

The Greek ePrescription System

Prescriptions Volume



The Greek ePrescription System

Compulsory Prescription Guidelines

- 4 groups of Prescription Guidelines including 20 therapeutic protocols in total have been incorporated to e prescription system:
 1. MDC 10 - Dyslipidemia (1THPS) Diabetes (4 THPS)
 2. MDC 08 - Osteoporosis (5 THPS)
 3. MDC 01 - Neurological (9 THPS)
 4. MDC 05 - Arterial Hypertension (THPS 1)
- Protocol Process in Short
 - Prescriptions that are related to the above-mentioned protocols are automatically routed via the patient treatment protocol tool
 - A five step mechanism is applied to fulfill medication selection
 - Treatment protocol (clinical guideline) selection
 - ICD 10 selection (preselected list from the guideline)
 - Select therapy step
 - Select therapy step conditions
 - Select medication active ingredient component
 - Finalize prescription, save and print.

The Greek ePrescription System

The Benefits

- Ruled based prescription and referrals validation
- Compatibility between diagnosis and drug prescribed
- Direct prescription execution and expenditure control
- Patient Medication Summary
- Monitoring of prescribing behavior
- Electronic drug validation and control of the validity, legality of drug movement to the supply chain
- Valuable and useful statistical data ensuring complete transparency and help decision making for the political leadership

eHealth Forum 2014



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Thank you

