ΕΘΝΙΚΗ ΑΡΧΗ ΗΛΕΚΤΡΟΝΙΚΗΣ ΥΓΕΙΑΣ

The clinical content and functionality of the National Comprehensive eHealth Record for Cyprus

Phase 1: *7/2023 – 1/2025*

Prof Theodoros Kyprianou
Consultant in Respiratory and Critical Care Medicine
St Thomas's Hospital NHS, Westminster, London UK
University of Nicosia Medical School

Mission and project framework

- Content and Functionality of EHR (6 basic medical specialties
- Mediation with Stakeholders (Patients, Doctors, AHPs, Insurance, Ministry, Patients etc)
- Know-how for European Projects (xtEHR +)
- Building consensus on the national architecture of Health Data (CyHDS)
- Preparing the ground for drafting IT specification

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Deliverables

- Stakeholders' analysis
- Consensus Content
- - Analysis of the 12 pillars: functionality
- - Gap analysis
- - Detailed list of content per information pillar
- - List of clinical routines per specialty and fields per routine
- ECHR functionality
- List / Agenda / Minutes of meetings with Stakeholders

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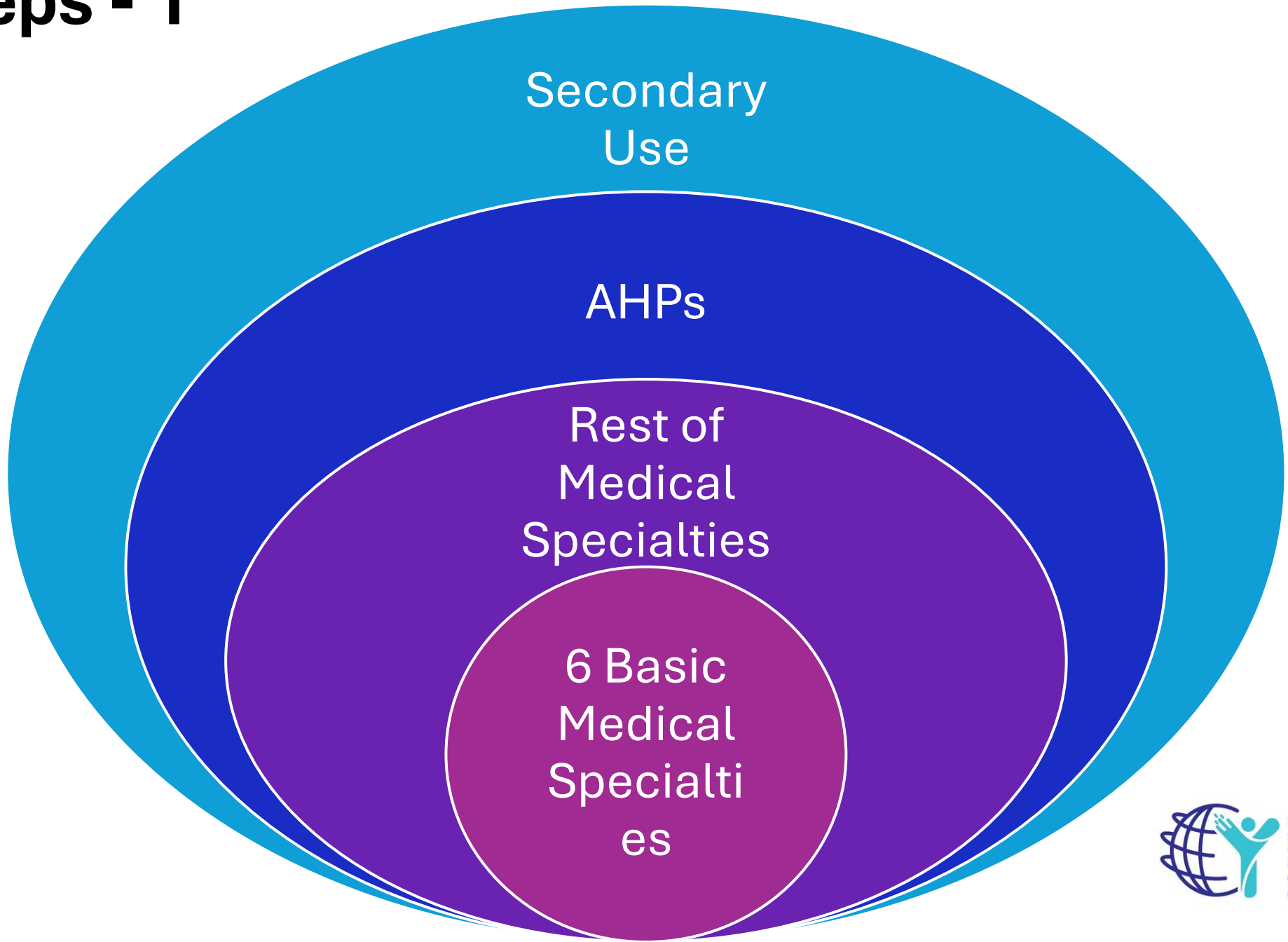
Next Steps - 1

Content



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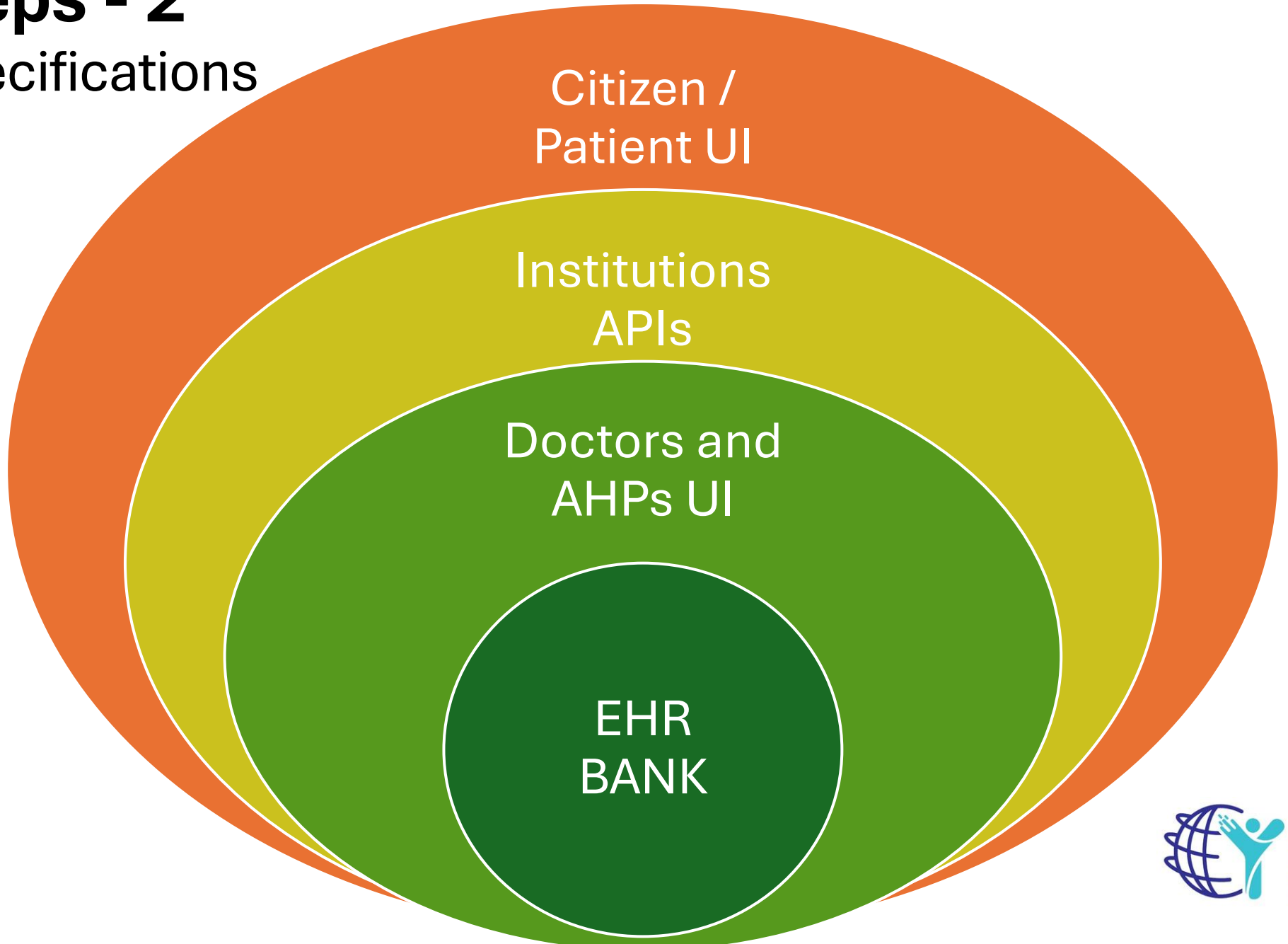
Next Steps - 2

Tender Specifications



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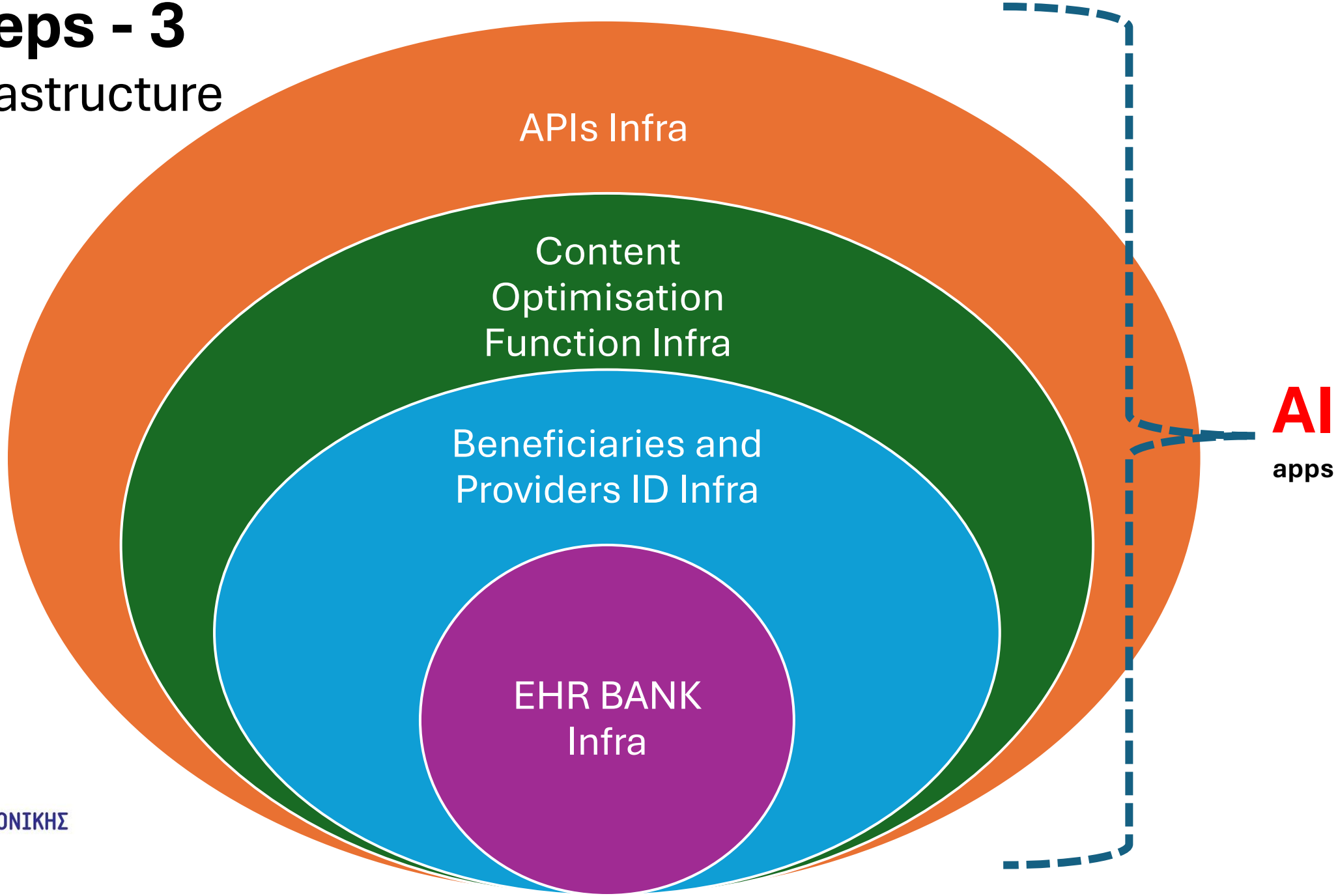
Next Steps - 3

NEHA infrastructure



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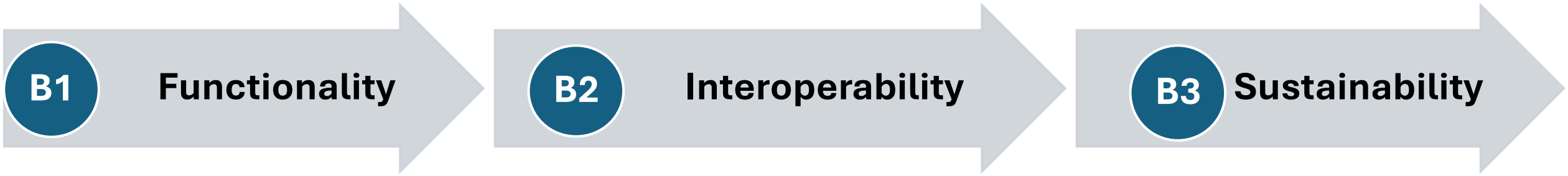
National EHR Infra

Τράπεζα Αποθήκευσης Ηλεκτρονικών Φακέλων Υγείας

Υποδομή (layer) διεπαφών με άλλους Οργανισμούς

Διεπαφή Καταγραφής Δεδομένων Υγείας (UI)

The operational pillars of an interconnected National and European EHR



Data quality – sparsity – granularity – structure - functionality

Data

quality
sparsity
granularity
structure
functionality

The concept of the “EHR Critical Data Capture Time”
“EHR Critical Data Capture Time”

- *represents the “golden hour”, that unique, valuable slot of time when a Health Professional (HP) sees / examines / treats a patient in the office / practice / clinic / Hospital / community centre / home, following predefined clinical routines*
- *i.e. a Paediatrician seeing a baby to plan vaccination or an obstetrician seeing a woman in the context of antenatal clinic)*
- *HP either consults the patient F2F or using Telemedicine service, using a Clinical User Interface (CUI) to see and enter data, based on the Clinical Routine catered for at that time*
- *CUI shall be connected (either directly as a webservice or through a local HIS) with the central EHR infrastructure*

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Data flow @ EHR Critical Data Capture Time

Envisaged ideal Data flow from and to EHR during the process of a clinical routine:

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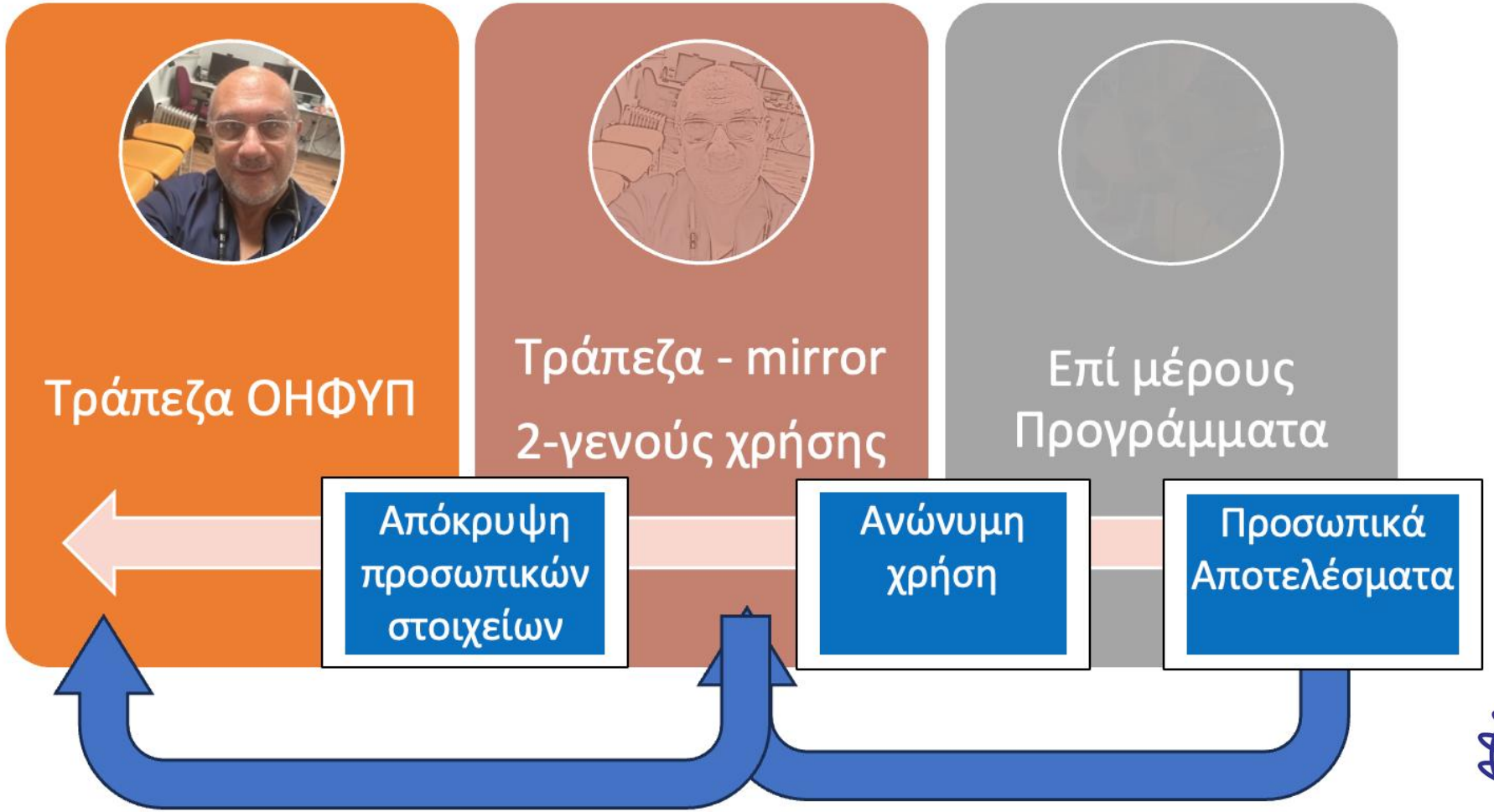
Health Data sources flow

Representation of Sensitive Personal Health Data
3-stages anonymity
in the Primary and Secondary use interplay



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1	2	3	4
Demographics[1], contact details, legal representative and GP contact details	Patient Summary[2] and Insurance info	Diagnoses[3], care plans, pregnancy, hospitalisations and procedures / interventions[4]	Allergies, medications, prescribing warnings, prescriptions / dispensation[5], vaccination card
5	6	7	8
Health Professionals' referrals, visits[6] & outcomes[7]	Laboratory, Imaging[8] and other diagnostic results	Hospital Discharge Summaries, Operation Theatre Reports, Birth, Health and Death Certificates	Health risks profile, functional status, special needs and rare Diseases profiles, medical alerts[9]
9	10	11	12
Medical Devices / Implants / Prostheses, Vital signs and Patients monitoring[10]	Social history, Habits, Self-reported patient outcomes[11]	Health Professionals and patients communication	Metrics, KPIs[12], Patient assessment and Learning[13]

STRUCTURE ITEM	RATIOANALE and FUNCTIONALITY	DEBATES and RISKS
Laboratory, Imaging and other diagnostic results	Input from Labs should enable graphical representation of data (i.e. timeline) Imaging reports should be sent as PDF files. A timeline of imaging studies shall be created as multiple PACS systems might contribute data for an individual patient. Live links for accessing imaging	This should probably be a 2-way function as EHR could be interfaced with HIS of Hospitals to give them Lab values historical data.

Gap analysis

Laboratory, Imaging and other diagnostic results	Input from Labs should enable graphical representation of data (i.e. timeline) Imaging reports should be sent as PDF files. A timeline of imaging studies shall be created as multiple PACS systems might contribute data for an individual patient. Live links for accessing imaging	This should probably be a 2-way function as EHR could be interfaced with HIS of Hospitals to give them Lab values historical data.

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Data source functionality analysis

Laboratory, Imaging and other diagnostic results	Input from Labs should enable graphical representation of data (i.e. timeline) Imaging reports should be sent as PDF files. A timeline of imaging studies shall be created as multiple PACS systems might contribute data for an individual patient. Live links for accessing imaging	This should probably be a 2-way function as EHR could be interfaced with HIS of Hospitals to give them Lab values historical data.

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Clinical routines

CLINICAL ROUTINES	STEPS	ROLES[32]	VIEWS[33]
Paediatric / Neonatal OP visit	Neonate / Child registration, assessment, procedures, management and care / follow up plan	Paediatrician / Neonatologist / Parent / Nurse / Assistant	To include remote community monitoring[35]
Pregnancy follow up	Mother registration, assessment, management and care / follow up plan	O&G / Midwife / Assistant	To include remote community monitoring
GP citizen registration	Patient registration, registration questionnaire, clinical assessment	GP / Nurse / Assistant	
GP consultation	Patient registration, clinical assessment, management, procedures and care / follow up plan	GP / Nurse / Assistant	To include remote community monitoring

Patient's journey functionality

PATIENTS' JOURNIES[41]	PATH DESCRIPTION	ROLES	GUI functionality
Birth	1. Pregnancy 2. Delivery 3. Post-delivery neonatal assessment 4. Neonatal Inpatient Care (if any) 5. Home transfer 6. 1st paediatric / neonatal assessment following home transfer	O&G / Neonatologist / Anaesthesiologist / Paediatrician / Midwife / Nurse / Assistant	

Step-wise access to EHR by HPs

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Fields of General / Specialties interest

Παραδείγματα πεδίων ή ομάδων πεδίων γενικής χρήσης	Παραδείγματα πεδίων ειδικής χρήσης (πεδία ειδικά για μια διαδικασία)[14]
Ονοματεπώνυμο	Εβδομάδα εγκυμοσύνης
Οικογενειακό ιστορικό (νόσημα και δέντρο)	Χημειοθεραπεία (σχήμα και διάρκεια)
Ιστορικό χρήσης εξαρτησιογόνων ουσιών	Πρόγραμμα εμβολιασμού παιδιού
Διάρκεια ενός συμπτώματος	Έλεγχος χειρουργικής τομής

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WHO has access / enters data to the system

- **Ιατροί**
- **Λογοθεραπευτές**
- **Διαιτολόγοι**
- **Ποδίατροι**
- **Εργοθεραπευτές**
- **Νοσηλευτές**
- **Φυσικοθεραπευτές**
- **Ψυχολόγοι**
- **Οδοντίατροι**
- **Φαρμακοποιοί**

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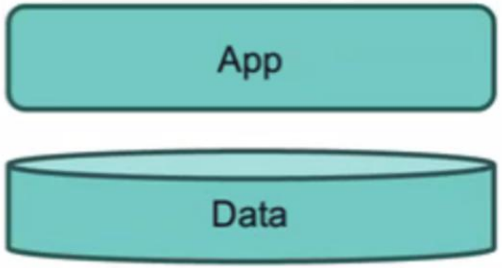
EMR generations

First generation
"best of breed"
(Standalone)

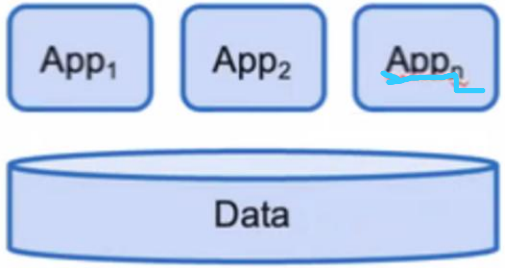
- Robustness
- Value for money
- Flexibility
- Vendor neutrality
- Innovation
- Data semantics
- Interoperability
- Renovation
- Decision support
- Reporting

Second generation
"best of suite"
(Mega suite or
monolith)



- Robustness
- Value for money
- Flexibility
- Vendor neutrality
- Innovation
- Data semantics
- Interoperability
- Renovation
- Decision support
- Reporting

Third generation
"open platform"
(Open ecosystem or
best of breed 2.0)



- Robustness
- Value for money
- Flexibility
- Vendor neutrality
- Innovation
- Data semantics
- Interoperability
- Renovation
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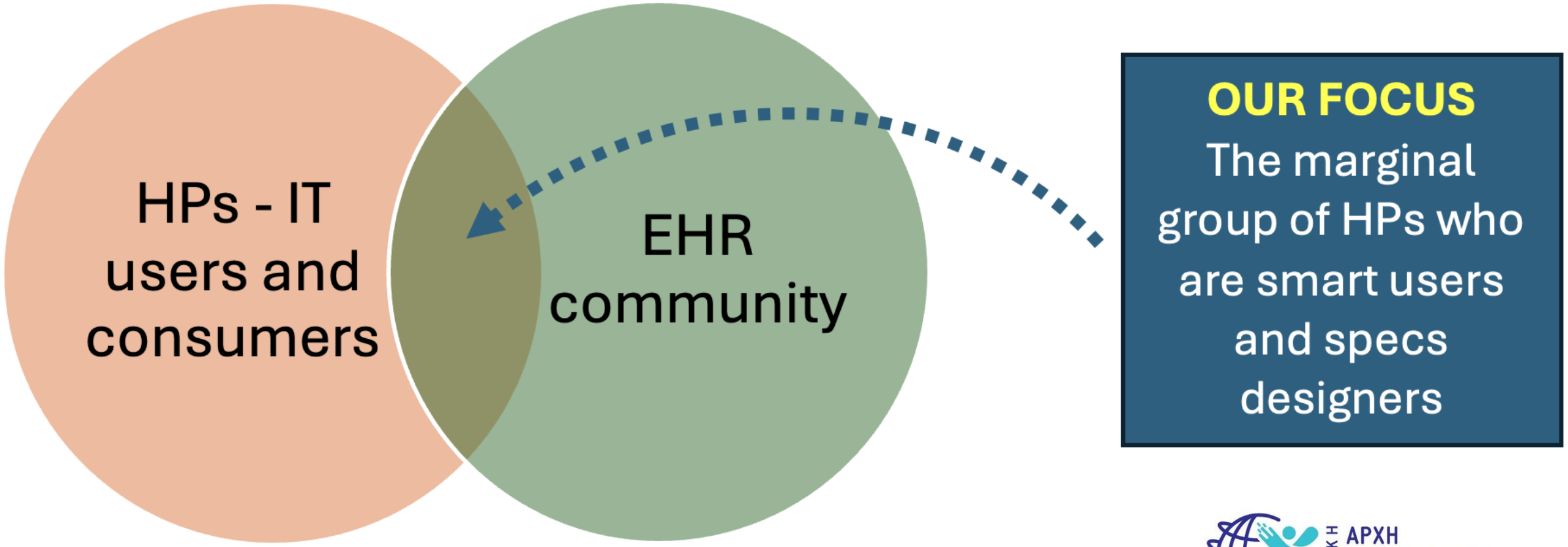
- Reporting

C-10-Q: Does the EHR provision / clause / requirement …

Q1	make sense to and is understood by the average HP who wants to co-design user requirements / specs?
Q2	promote and serve best clinical practice (i.e. guidelines, care protocols)?
Q3	facilitate reliable data entry (i.e. intuitive interface, data entry mechanisms)?
Q4	save clinicians' time and effort through job automation for clinical routines?
Q5	facilitate clinical routines (i.e. pre-natal visit, paediatric vaccination visit)?
Q6	reinforce patients' safety culture and systems and increases quality of care?
Q7	reinforce patients' autonomy and formal / informal carer's contribution?
Q8	facilitate care equity and inclusiveness bridging staffing and expertise regionalisation, knowledge and care gaps?
Q9	promote life-long learning for clinicians and patients, bringing in collective experience as decision support?
Q10	promote integrated, holistic and seamless in-patient, out-patient and community care?

A careers challenge: The rare species of IT tech savvy Clinicians are neither motivated nor allowed to assume additional eHealth, EHR-related roles



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The clinical content and functionality of the National [illegible]nsive eHealth Record for Cyprus

THANK YOU

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