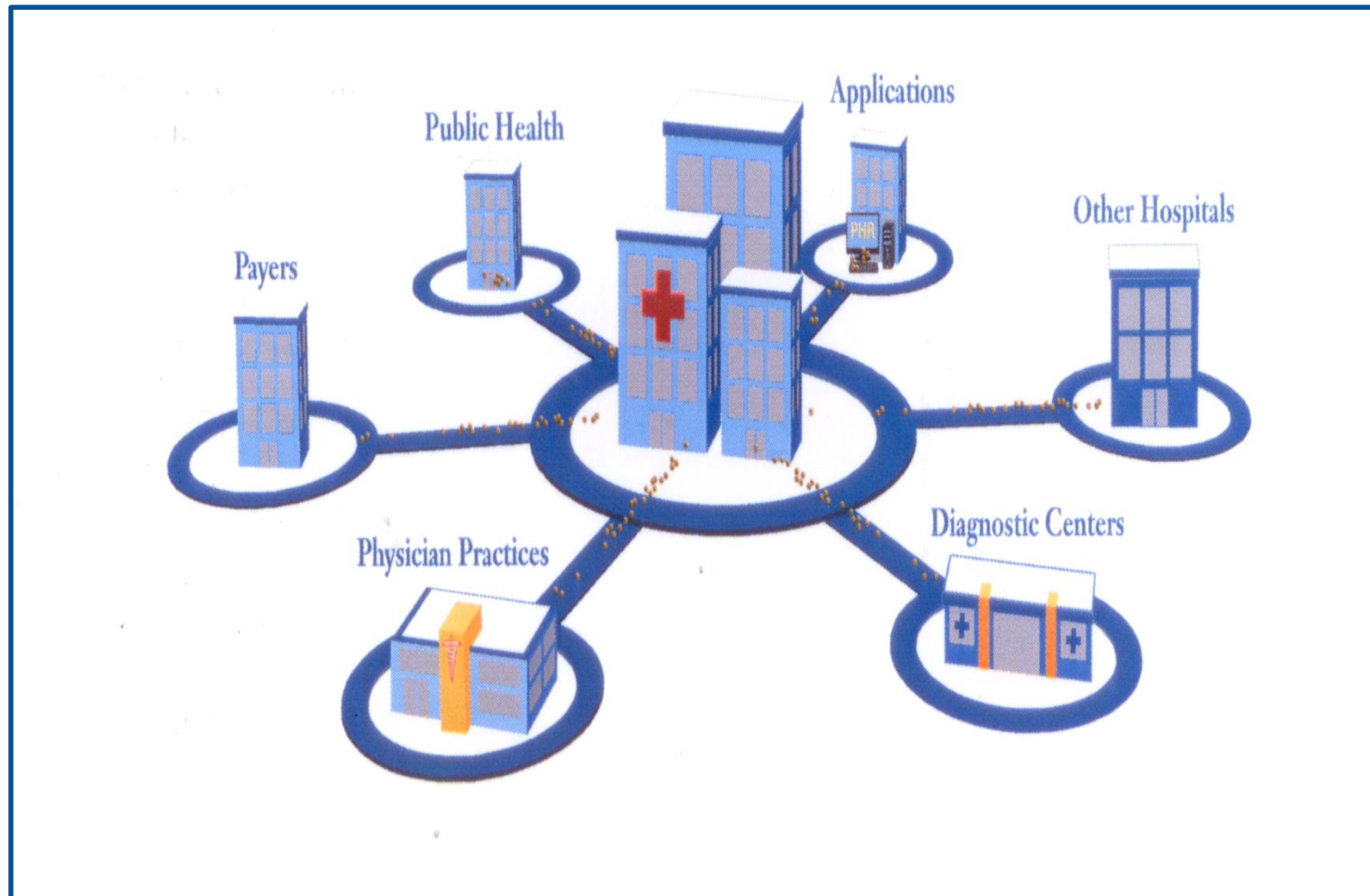# Improved healthcare services by efficient information exchange in the INSEED Project

Acad. Ioanel Sinescu

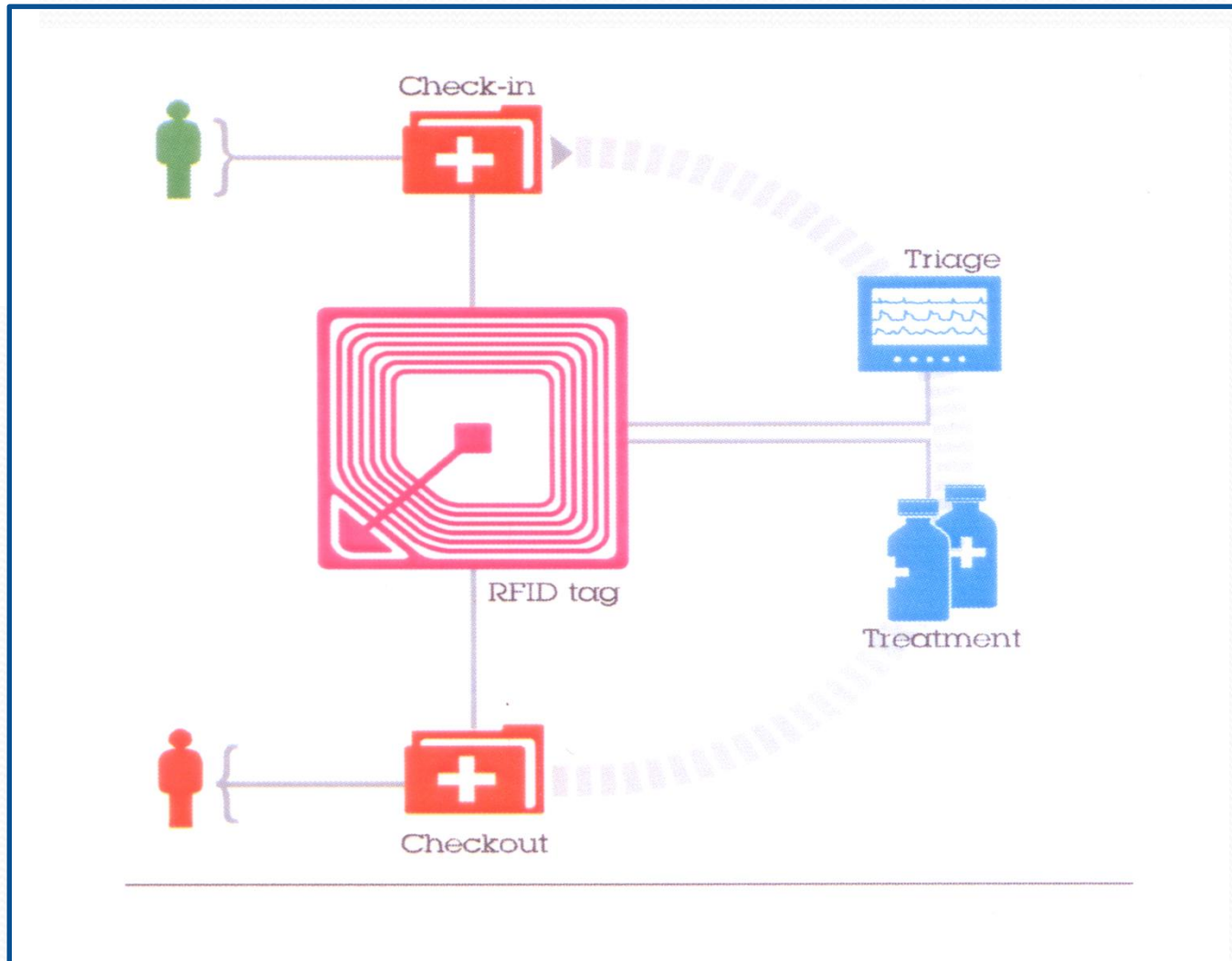"Carol Davila" Medical University, Bucharest

Health system

The Impact of Health Information Services and Systems in the Romanian N.H.S.

- Wards
- Out patient clinic
- Laboratories
- Pharmacy
- Operating theatres
- I.C.U
- 24 h duties
- Economic Department
- Human resources
- Statistics

Greater efficiency

Information Services in Healthcare

Hospital ⟶ University clinic ⟶ Research

1.Monitoring the movement of the patients + costs:

      -out patient

      -admittance in the hospital

      -medical analysis

      -medical consulting

      -surgical operations

      -I.C.U

      -treatments; recoveries

2.Investigations: Echo

          Rx

          Endoscopies
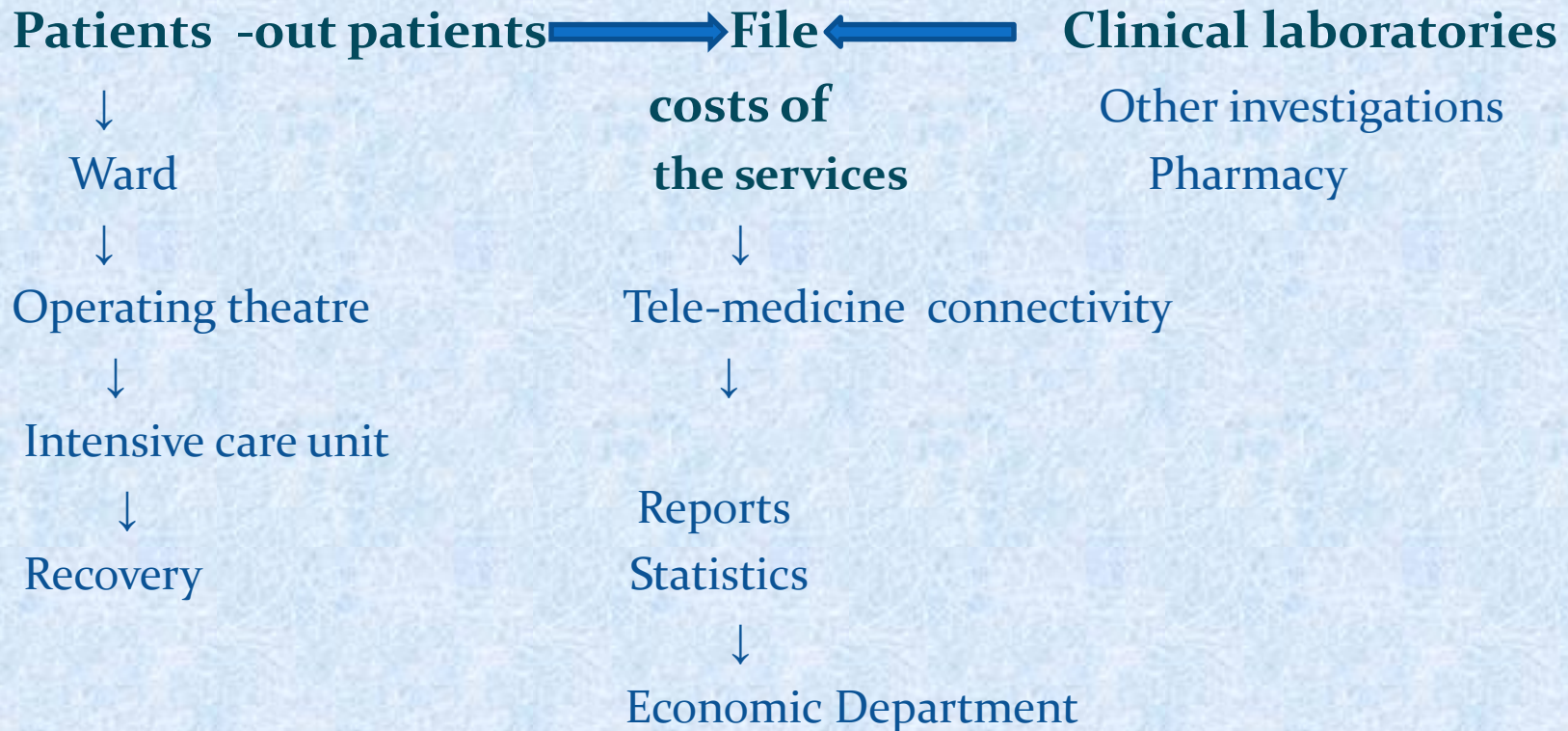
          EKG

          EEG

          CT

          MRA

          SRA

          PET

3. Externalization of patients

Information Services in Healthcare
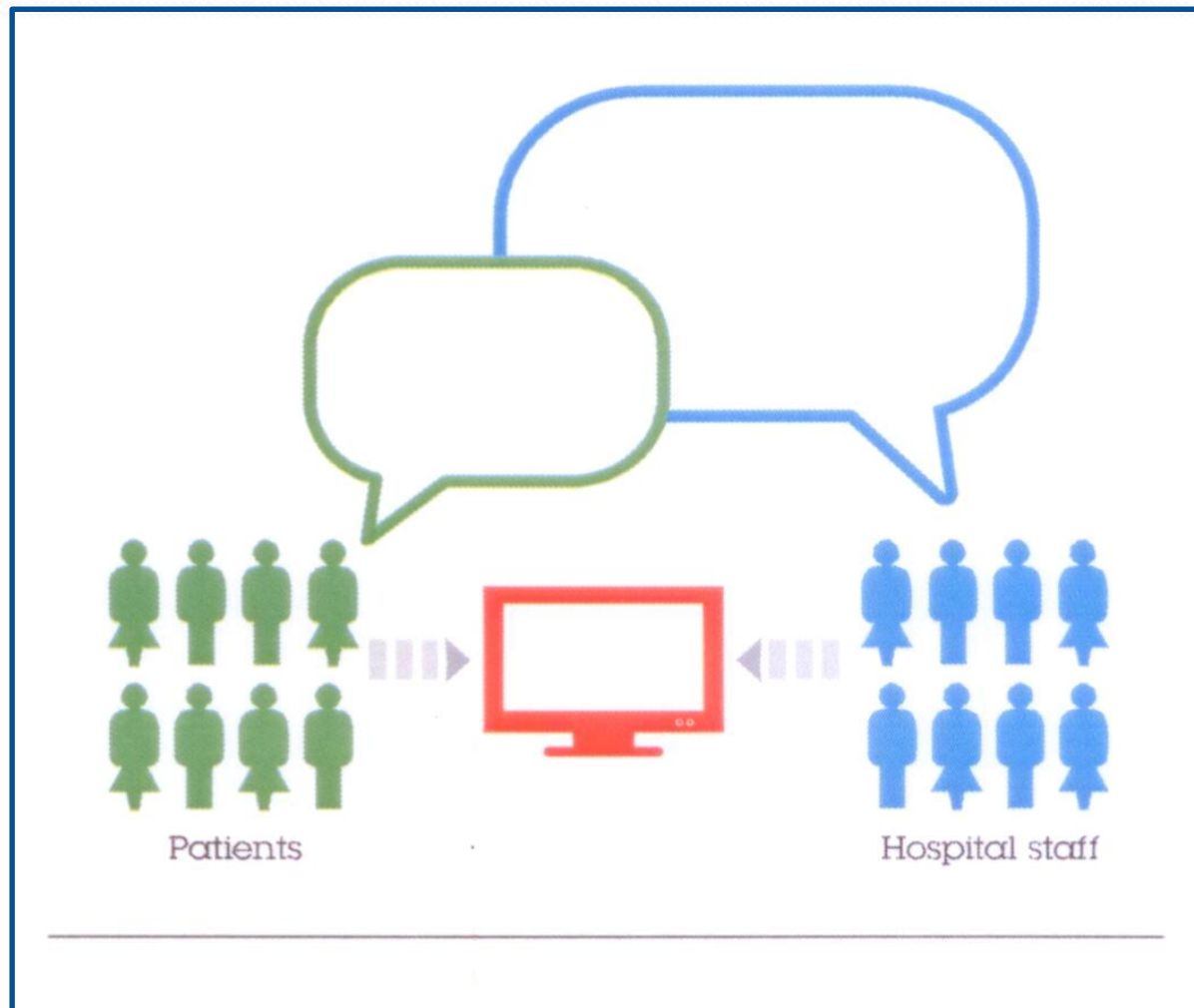
- **Real time evidence of costs/ patient/ ward/ hospital**
- **Evidence of stocks** - pharmacy

  - reagents

  - food

  - consumables

  - fix items

- **Salaries**
- **Reports**
- **Financial balances**

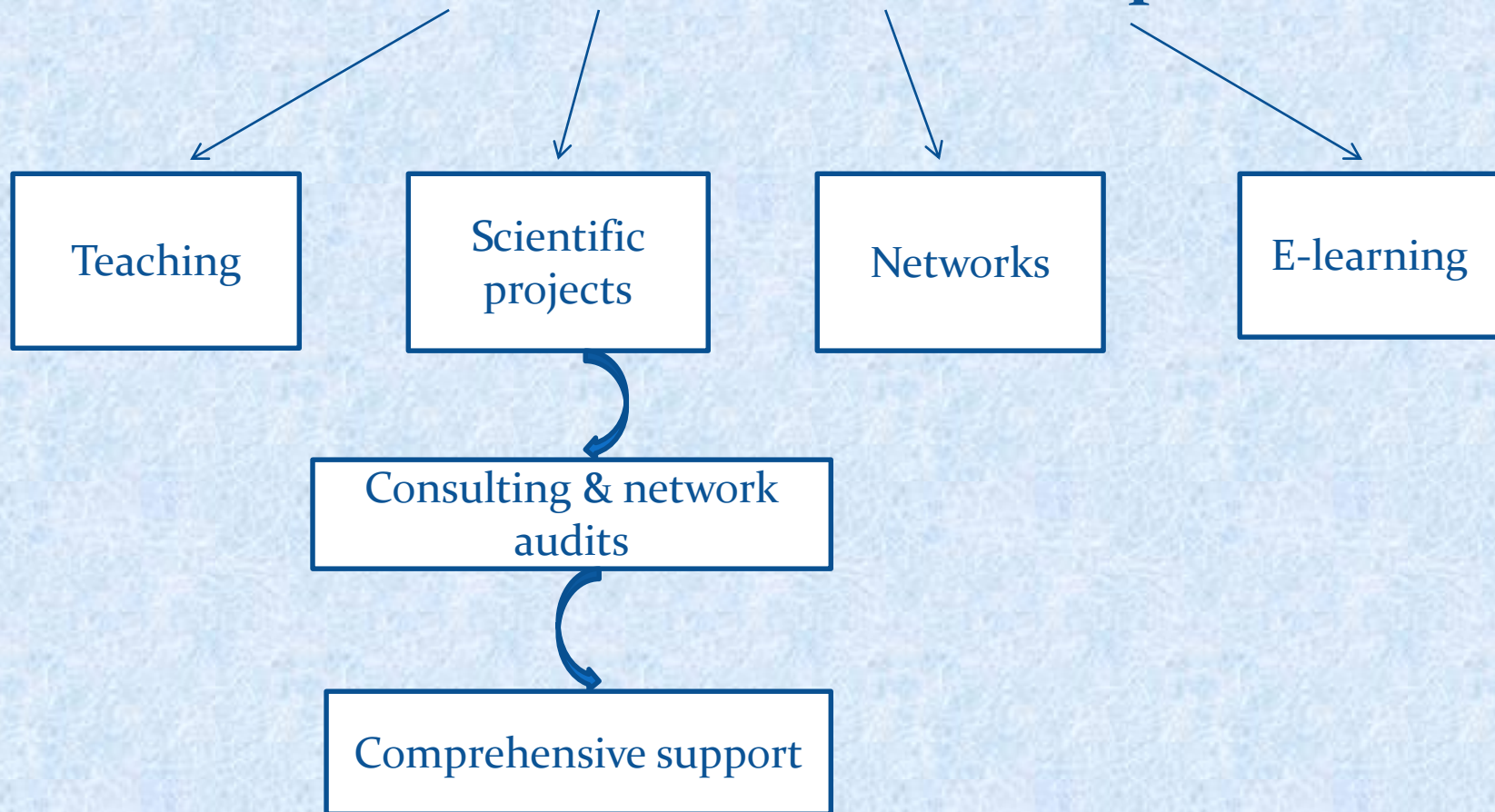# Service Oriented Architecture for Information Services in Healthcare

Patients -out patients ➡️ **File** ⬅️ **Clinical laboratories**

↓   **costs of**   Other investigations

Ward   **the services**   Pharmacy

↓   ↓

Operating theatre   Tele-medicine connectivity

↓   ↓

Intensive care unit

↓   Reports

Recovery   Statistics

↓

Economic Department

Smarter healthcare

Patients   Hospital staff

Smarter healthcare

- Do our doctors have access to the right patient and drug information at the right time?

- Do we collaborate, not just cooperate, with other doctors, our patients and the healthcare community?

- Are our operational processes able to adapt and respond quickly to meet patients demands?

- Is our medical information stuck in silos and underutilized across the organization?

- Are we focused on the patient?

Interconnected Education and Research on Services for Smart Care

University clinic – Research

Research and Grants Dept.

Teaching	Scientific projects	Networks	E-learning

Consulting & network audits

Comprehensive support

Information management (INSEED Development)

- Independent and Standards – Based Technology

- Interoperability Services

- Professional Services
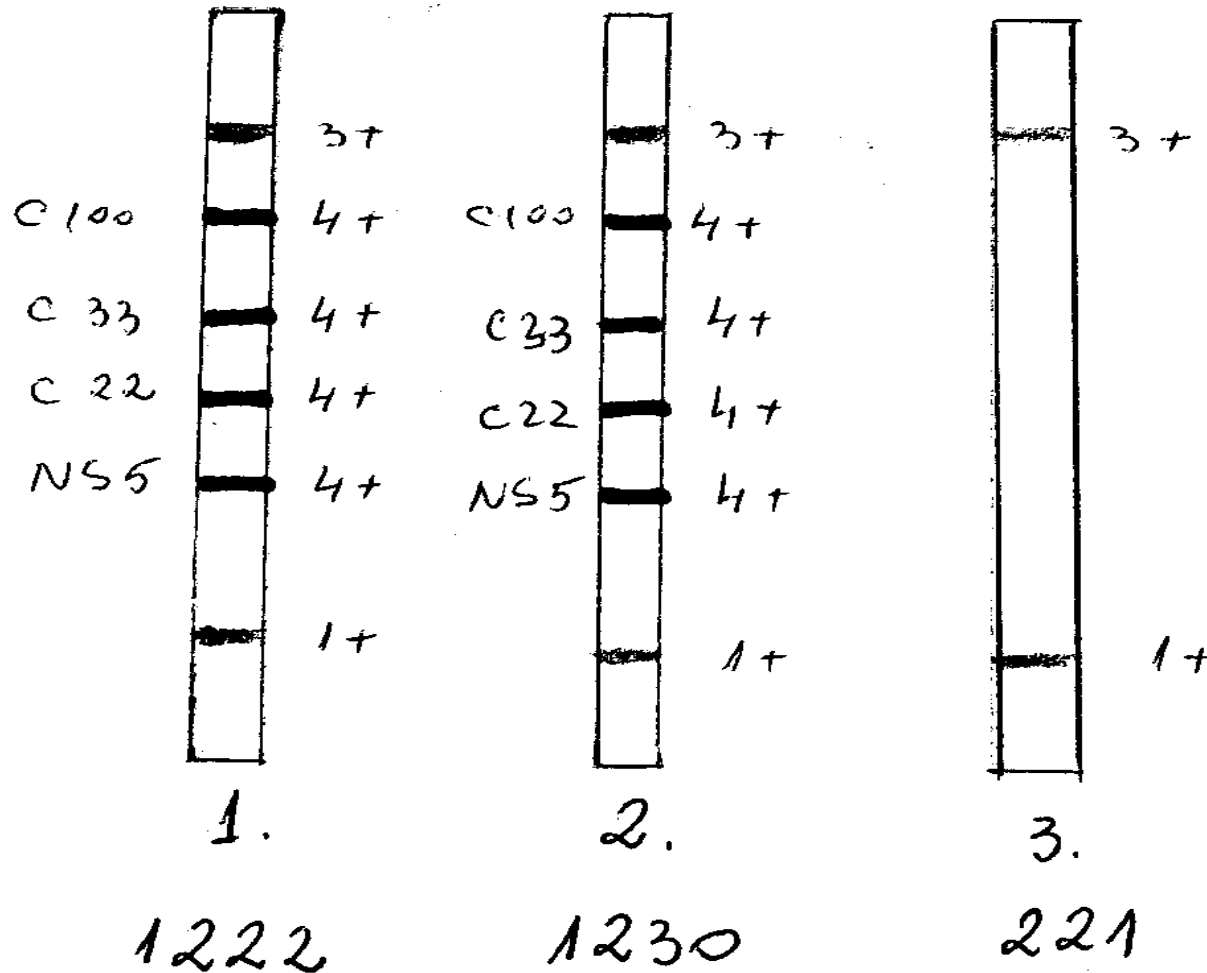
- Optimizing care and performance

INSEED Partner Universities in Healthcare Services
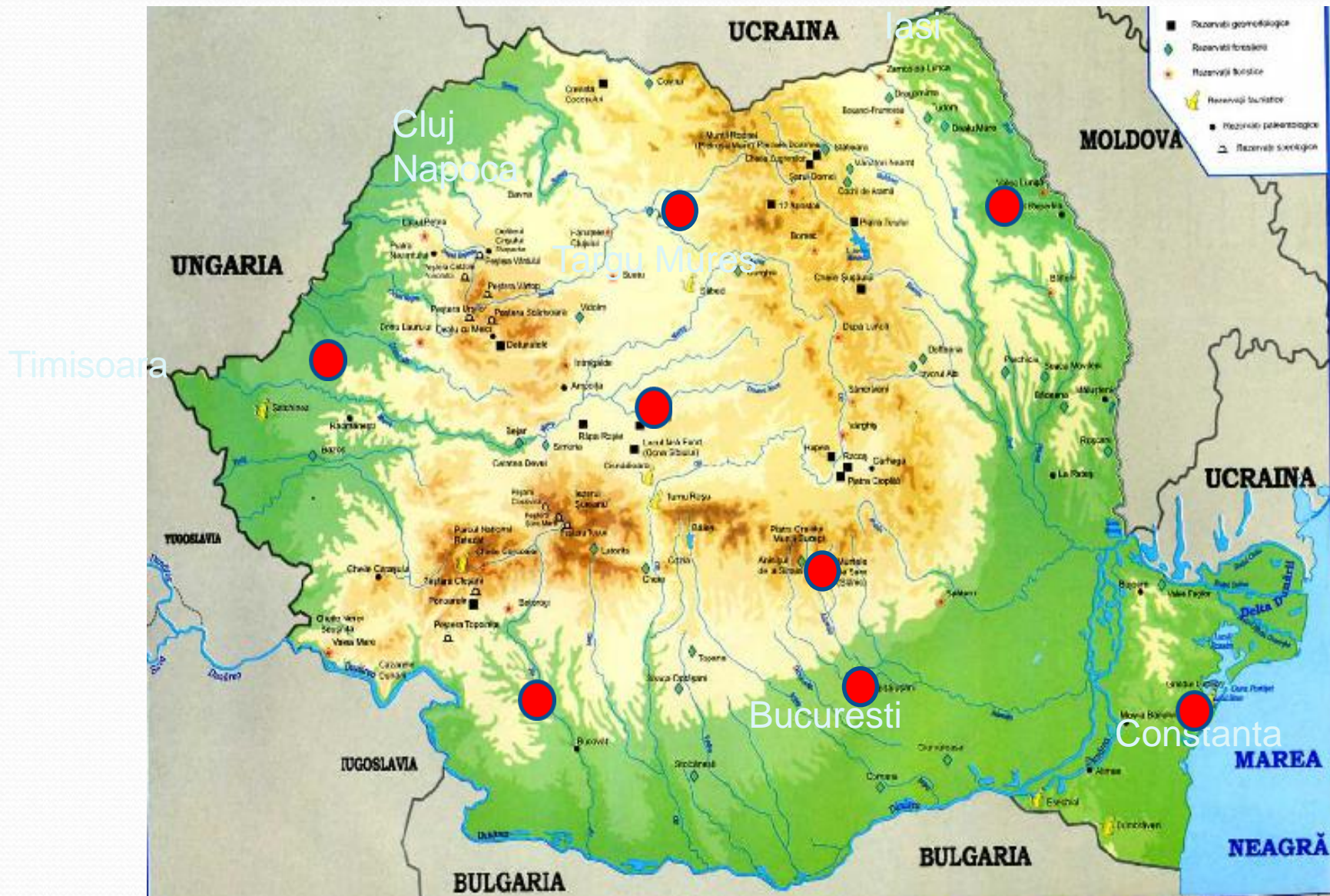
Research in Information-based Medicine – Transfer of INSEED results in Healthcare

RIBA confirmatory test for HCV

Research in Information-based Medicine – Transfer of INSEED results in Healthcare

- HLA typing: Bone Marrow Tr. Unit

    Liver Tr. Unit

    Renal Tr. Unit

    Pancreatic islets Tr. Unit

National Bone Marrow Donor Registry

Waiting list for - Bone Marrow tr.
                  - Liver and Renal tr.

Research in Information-based Medicine –
Transfer of INSEED results in Healthcare
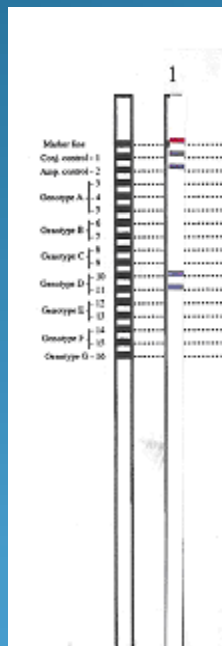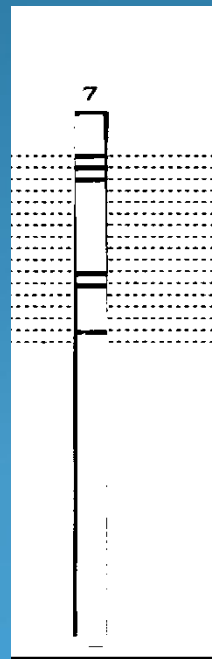## Allele SBT- new alleles- Allele SEQR typing kit - Patients results

Research in Information-based Medicine – Transfer of INSEED results in Healthcare
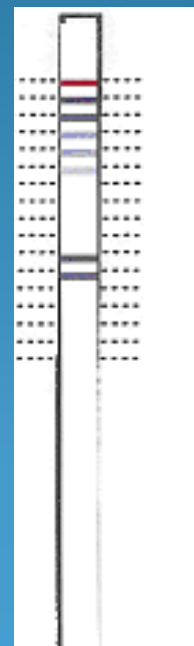## HBV genotyping in Romania
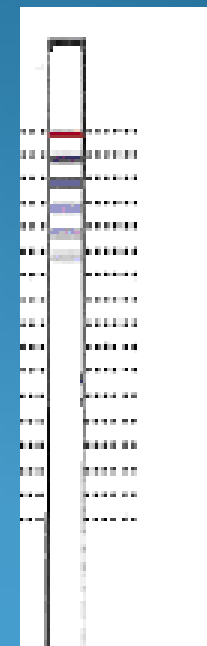
INNO - LiPA HBV, Immunogenetics
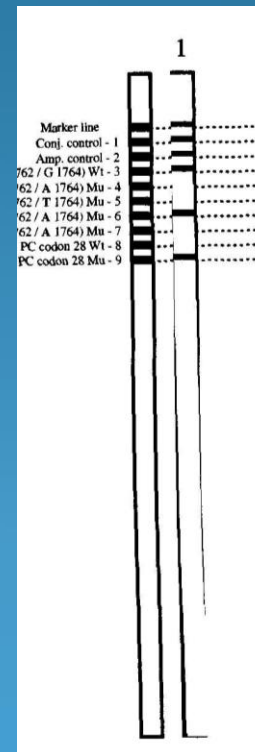

D Genotype   D+F Genotype   D+A Genotype   A Genotype

Research in Information-based Medicine – Transfer of INSEED results in Healthcare

HBV precore – core mutants - INNO – LiPA
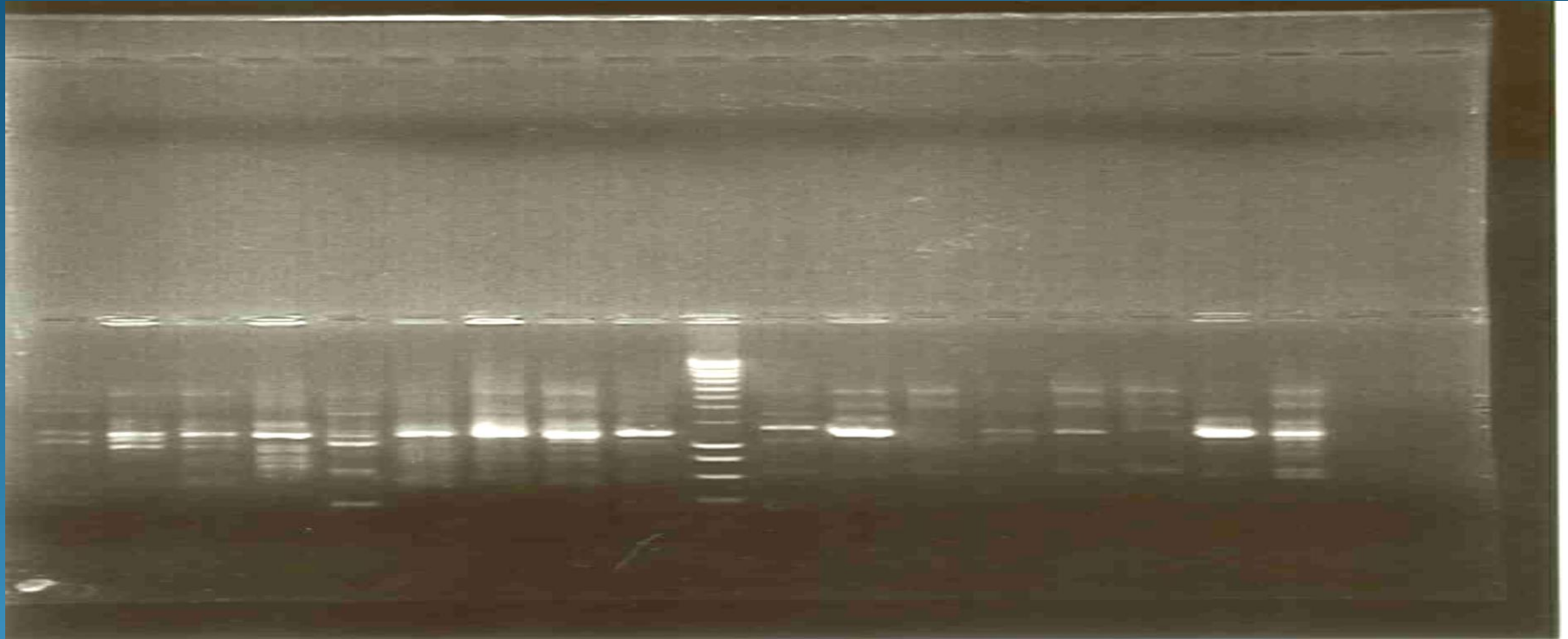## HBV precore, Immunogenetics

BCP A 1762/G1764
PC codon 28- no
mutants

BCP A 1762/G1764
BCP T 1762/A 1764

HBV in pathogenesis of HCC


```
Query:    1      tttgtcctctaattccaggatcaacaacaaccagtcacgggaccatgcaaaa--tgca-g  57
                 ||||||||| |||||||||||||||||||||||||||| |||||||||||||||   |||| |
Sbjct:  317      tttgtcctctaattccaggatcaacaacaaccagt-acgggaccatgcaaaacctgcacg  375

Query:   58      actcctactcaaggcaaactctatgtttccctcatgttgctgtacaaaacctacgatcgg  117
                 ||||| | ||||||||||| ||||||||||||||||||||||||||||||||||||  ||
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Query:  118      aaattg-acctgtattcccatcccatc-tcctgggctttcc--aaatacctatgg       168
                 |||||| |||||||||||||||||||| ||||||||||||    |||||||||||||
Sbjct:  435      aaattgcacctgtattcccatcccatcgtcctgggctttcgcaaaatacctatgg       489
```

Conclusions

- UMF Carol Davila and the Immunogenetics Centre developed education and research activities in the domain of Healthcare Services with ICT support.

- Transplantation immunology is complex, uses software services

- Our Immunogenetics Centre provide expanded immunological monitoring together with virological and drug monitoring of the transplanted patients.

- Our goal is to offer **complete integrated monitoring data of our patients** and to fulfill EFI Standards. For this we need smart IT solutions and services in our University hospital.

- Clinical and laboratory scientists should work together as a team in to have a complete overview of transplanted patients.