IMPROPER USE OF MEDICAL INFORMATION – eHEALTH PRIVACY & SECURITY

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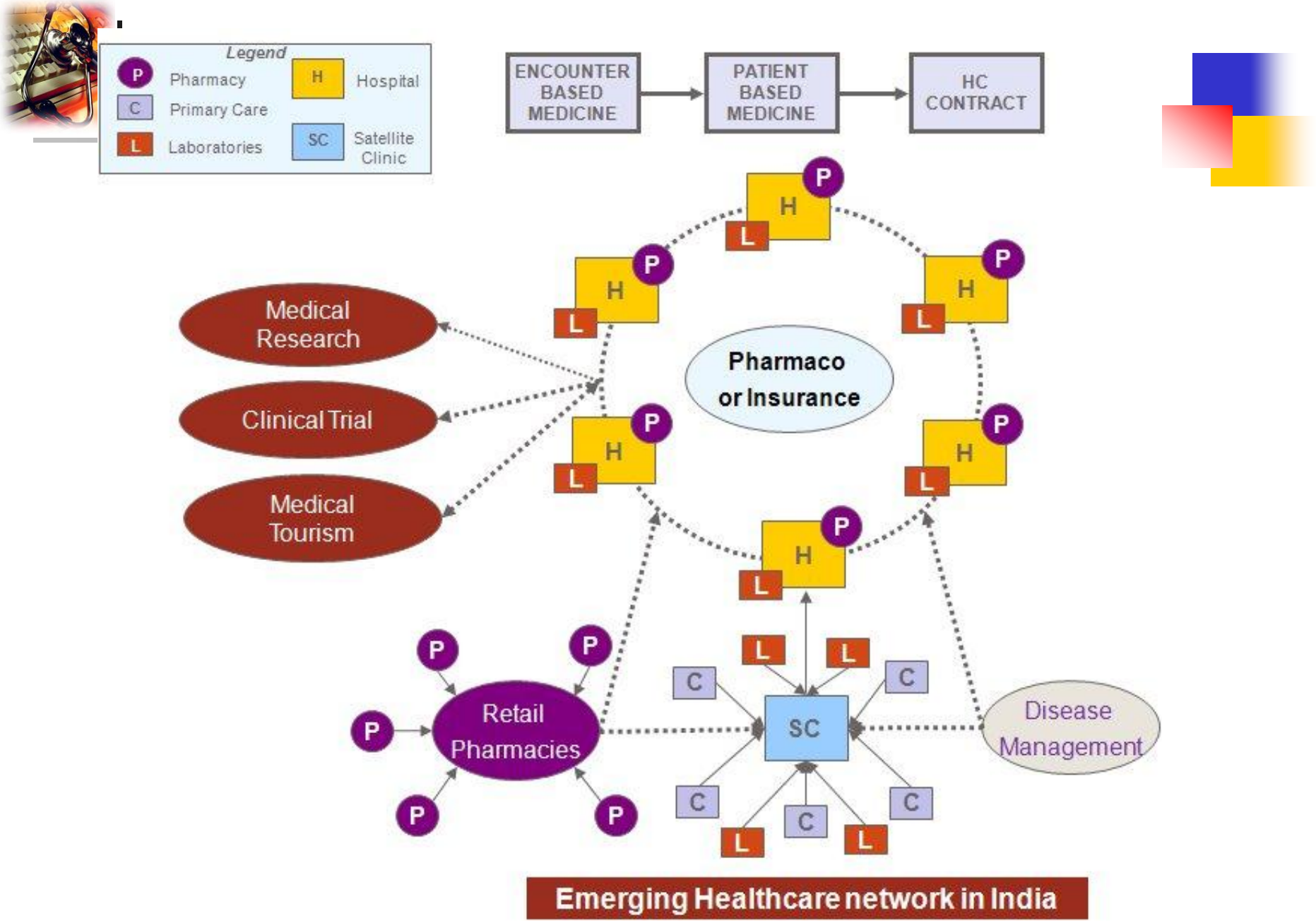
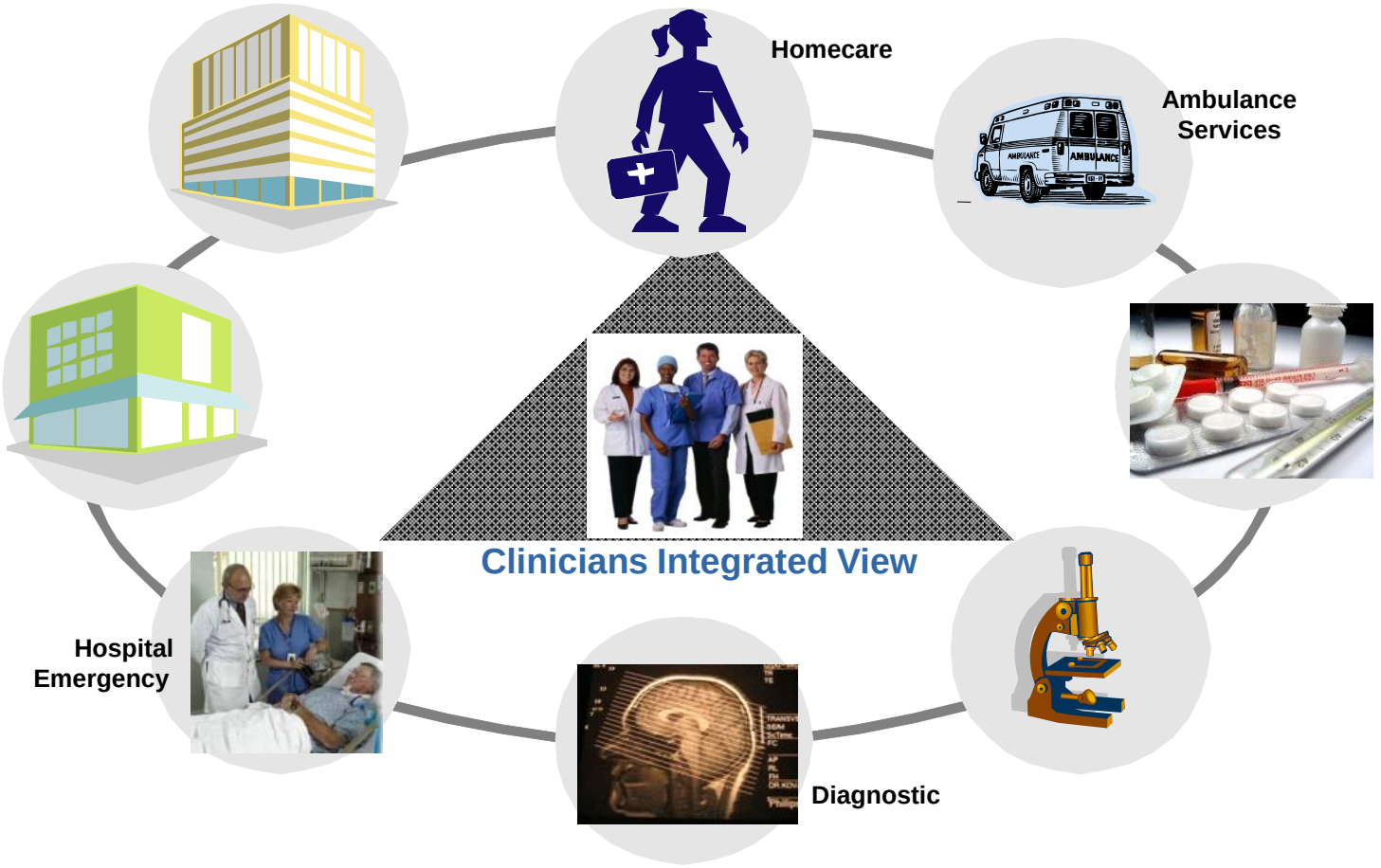


Source: http://healthcareitstrategy.blogspot.com/

Healthcare Data Sources



Health Information Exchange - Chances of Data leaks galore!

•EHRS •EHRS •EHRS •EHRS •EHRS •EHRS •EHRS

•Standardized Architecture

•Standardized Data Vocabularies (encoding rules)

•Standardized Data Structures

•Standardized Interfaces

•Standardized Functional Behavior

EHR SOLUTION (EHRS)

EHR INFOSTRUCTURE (EHRi)

Ancillary Data & Services

Health Information Data Warehouse

EHR Data & Services

Registries Data & Services

Longitudinal Record Services

Health Information Access Layer

Point of Service Application

Point of Service Application

EHR Viewer

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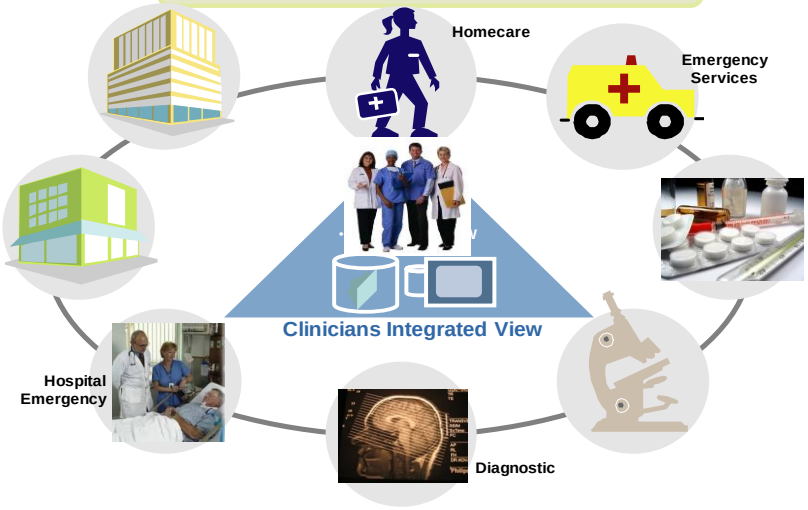
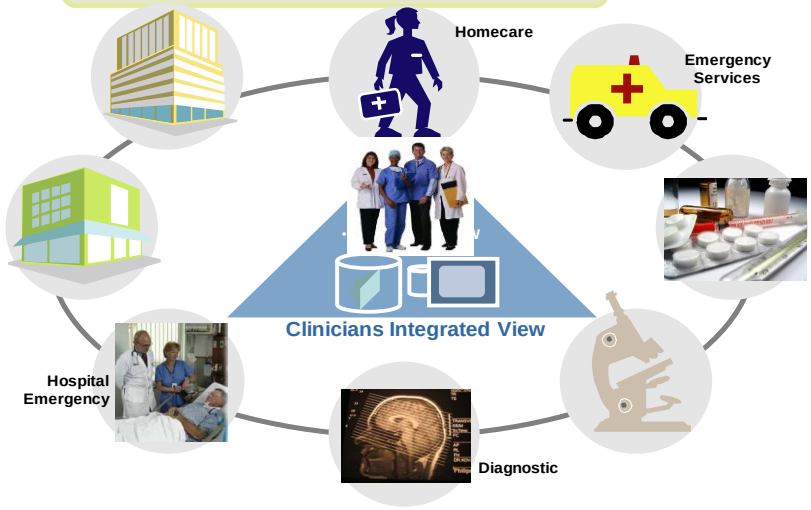




HIPAA Title II

- **Title II: Preventing Health Care Fraud and Abuse; Administrative Simplification; Medical Liability Reform**
  - Data Privacy
  - Transactions and Code Sets
  - Data Security
  - Unique Identifiers

Data Privacy

- **Protected Health Information (PHI)**
  - Right to keep personal information from outside world
  - Hospital staff, in-house and outsourced IT staff may be authorized to see data and may disclose it inappropriately
- **Protect sensitive information** – PNDT and MTP Act
- **Positive results for sensitive Lab tests** - HIV etc.
- **Public health research** - Anonymised data
- **EMR implementation challenge** - People master, Deptt master to be in sync in integrated systems

Transactions and Code Sets

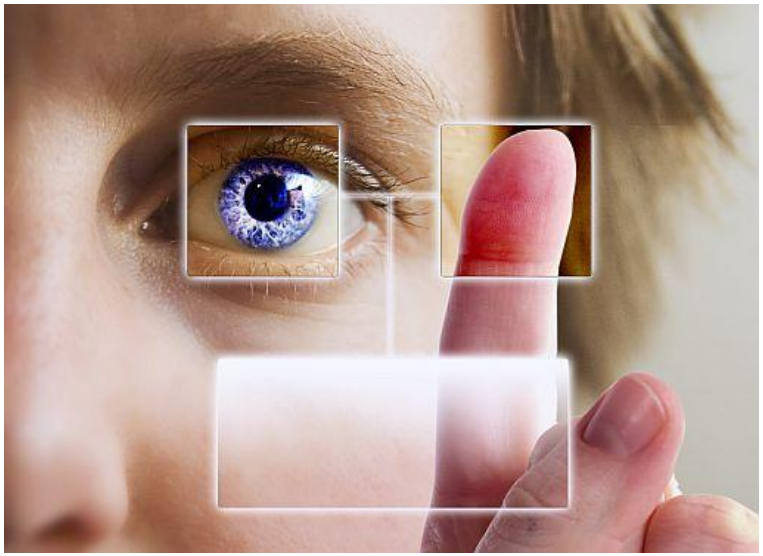
- **Master Data integration challenge** – codify diagnosis, procedures and order sets
- **Data Analytics challenge** - standard terminology for clinical notes
  - Diabetes with MI discharged with B-blocker
  - Diabetes with Coronary Atherosclerosis discharged with B-blocker
  - Type-II Diabetes with CHF discharged with Metoprolol

Data Security

- **Network security**
  - Firewalls,
  - Data centre,
  - IT Support Teams,
  - Outsourcing
- **Data Security - Encryption**
  - Public/Private keys
- **Physical security**
  - Authentication
  - Authority
  - Audit

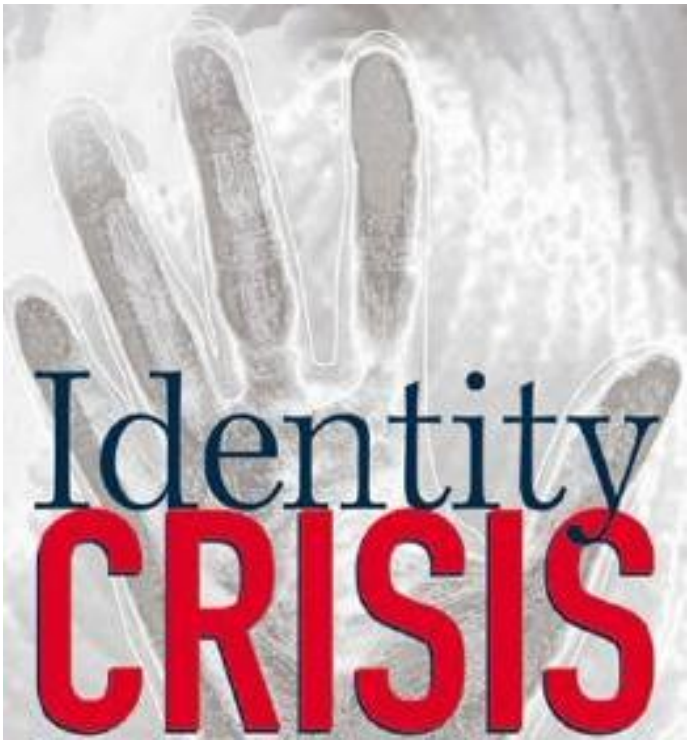
Physical Security

- **Authentication - are you who you say you are?**
  - Passwords, Biometrics (finger print, retinal scan), smartcards
- **Authority - do you have a need to know?**
  - User U in role R who satisfies constraint C has permission P
  - Ms Ann working as Nurse in ED has r/w/x permissions; whereas she doesn't have those permissions offduty
  - Ensure only authenticated users to perform authorized activities on authorized data
- **Audit - record of who actually got into what**
  - Record of every entry, correction, change, over ride etc

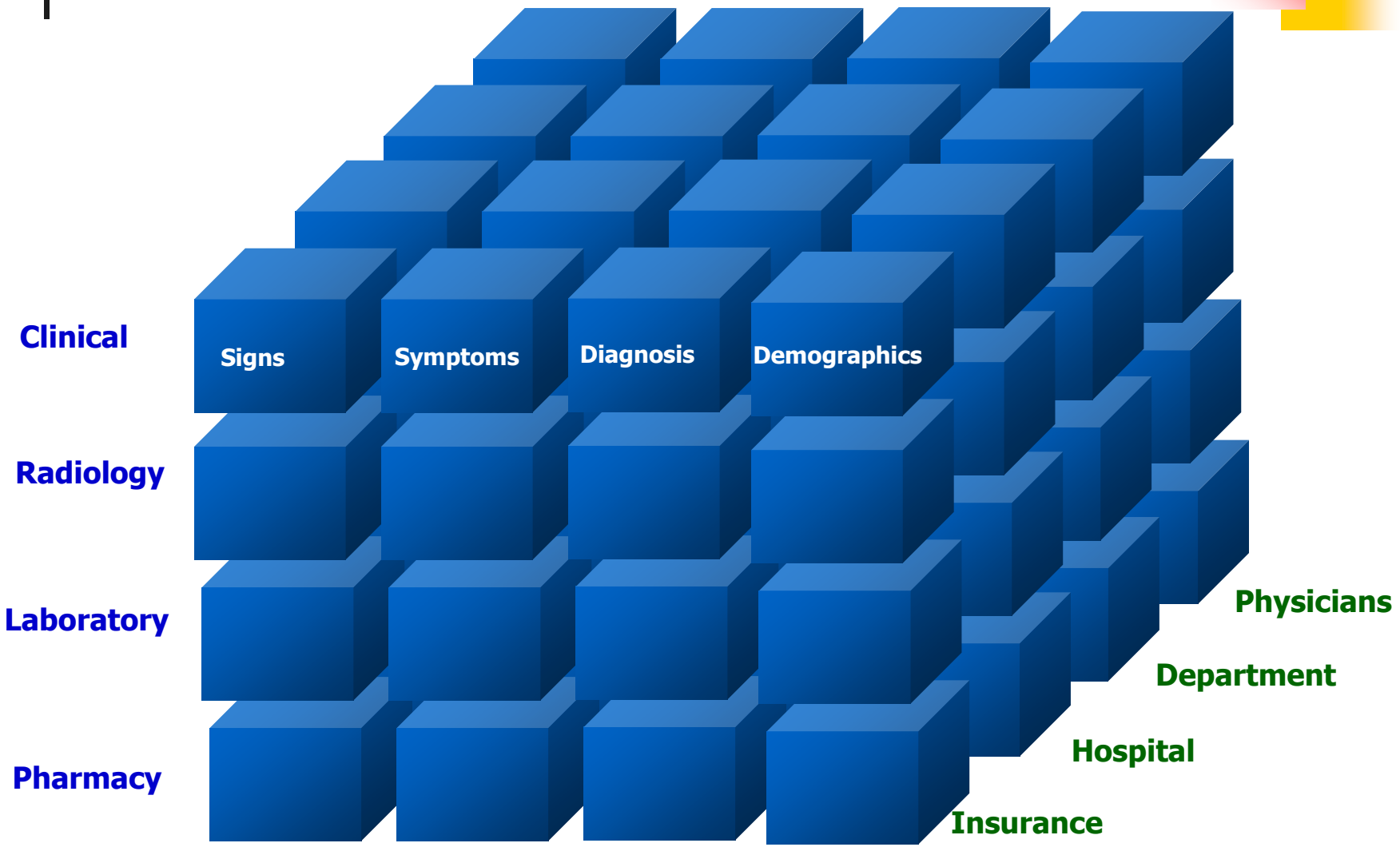


Unique Identifiers

- **Point-to-Point integration between 2 systems**
  - People master to be in sync
  - Department master to be in sync
  - Dr Om Prakash Singh in ENT vs Dr OP Singh in Otolaryngology?
- **Health information exchange between systems**
  - Physician Registry
  - Patient Registry
  - Disease Registry
  - Document Registry



De-Identify before Data Analytics



Summary of Privacy & Security

- Computing/network infrastructure can deal with security
- But privacy is a policy matter
- Anonymizing of databases helps but it isn't foolproof
- In general, *people* are the weakest security and privacy link

Soon these small steps will be a Mammoth…

Solid foundation goes a long way…

Thanks.

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