IBM Healthcare & Life Sciences

A National Healthcare Data Network for India

IBM
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India's Healthcare System: Positive Things

- Eradication of diseases like small-pox
- Increased life expectancy (about 65 in 2000)
- About 5× more hospitals and 10× more doctors now than in 1951
- World-class pharmaceutical industry
  - About 20% of all (legal) drugs entering the US are from Indian pharmaceutical companies
  - Other than the US, Indian pharmaceutical companies have the highest number of drug filings with the FDA
- Some very good high-end hospitals

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India's Healthcare System: Issues

- Money
  - Stagnant public spending (bottom 20% of countries)
  - 75% - 90% of government spending is made by state governments, which in turn consists largely of salaries
  - Large variance between states – Kerala spends twice as much as Bihar per capita
- Almost 80% of all health spending is private (largely unregulated)
- Number of hospital beds per 1000 population: 0.7
  - Comparable number is 1.4 for low income countries and 7.4 for high income countries
- India accounts for 17% of world population and 20% of disease burden

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India's Healthcare System: Issues

- Nearly all private spending is "out-of-pocket"
  - About 25% of hospitalized individuals fall below poverty line as a result
  - Less than 15% of the population is covered through some form of pre-payment
- Poor still depend on public services for majority of major healthcare services
- Significant inefficiency and fraud in the distribution of drugs and supplies

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Background: The Presidential Report

In early 2005, an IRL-led team submitted a report entitled "*Improving India's Healthcare System through Information Technology*" to the President of India

This report made 3 principal recommendations:

1. The construction of a nationwide health data network for sharing health information
2. The adoption of electronic storage of data at all stages (including health records)
3. The adoption of standards for communication and storage

4 areas were expected to benefit

1. Operational efficiency
2. Planning and management
3. Education and research
4. New models of health delivery

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Background: India Healthcare Hyper-growth plan

- The Executive Summary in a hyper-growth plan for Healthcare in India makes the following points (from a draft document dated February 2005)
  - Health insurance is on the rise, and is creating incentives for driving efficiency and quality improvements in hospitals
  - Professionally managed private hospital chains have emerged, and are growing
  - Innovative high-volume business models are emerging around specialty care
  - Healthcare is high on the National agenda
  - Success in healthcare in India will have global implications for IBM
    - Medical BTO, pharma clinical BTO, and medical tourism to India are on the rise
    - There is strong demand for proven global solutions, e.g., clinical ISV applications, standards-based healthcare middleware, data warehousing, *etc*.
    - Successful models for hospitals and insurance will provide strong references for other developing markets
  - Suggests three market experiments with key customers early in 2005-2006:
    1. Insurance claims connectivity pilot with one or more insurance companies and TPAs
    2. EMR pilot with Apollo and other hospitals
    3. Hospital BPTS offering pilot with a hospital partner

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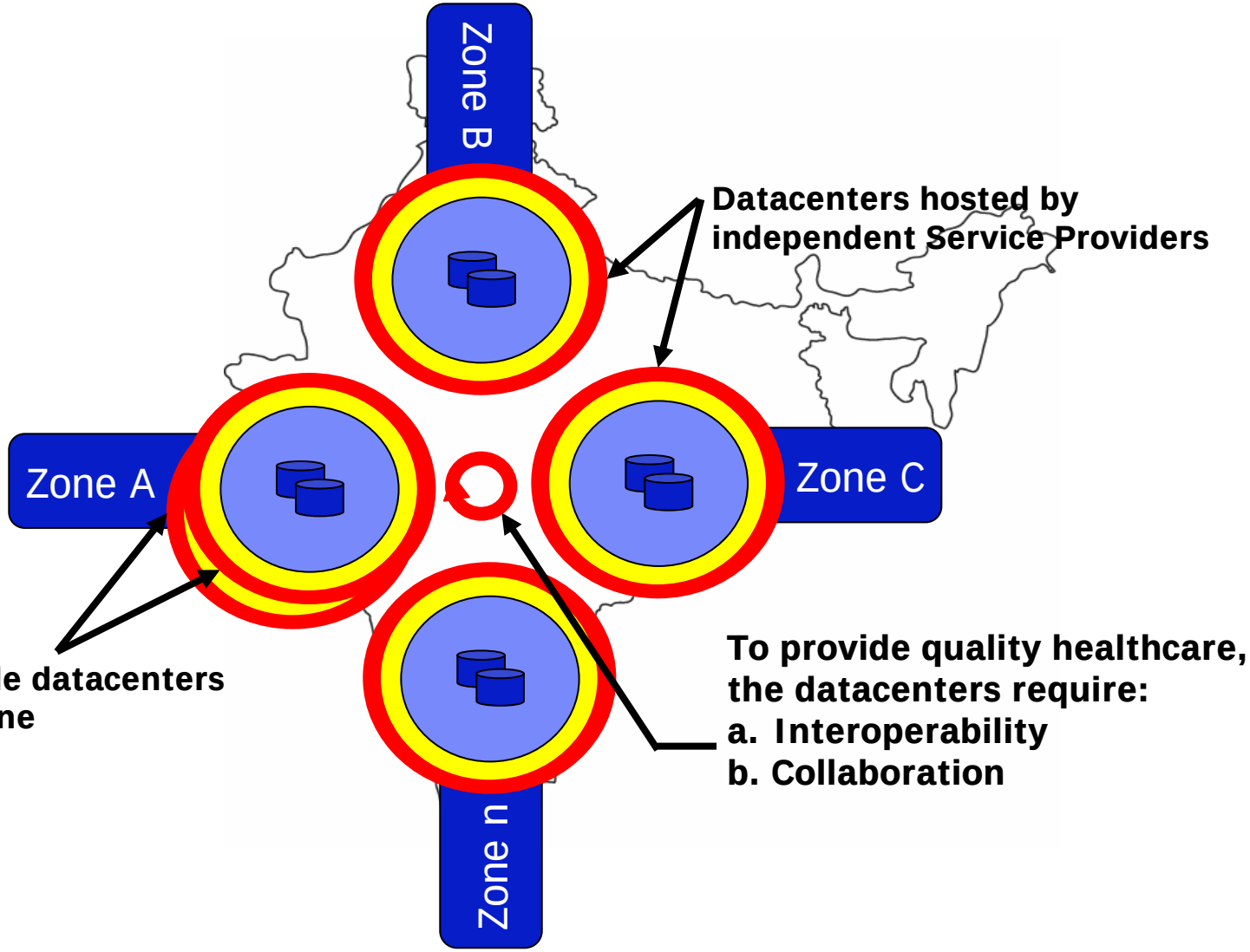
Distributed Healthcare DataCenter Overview



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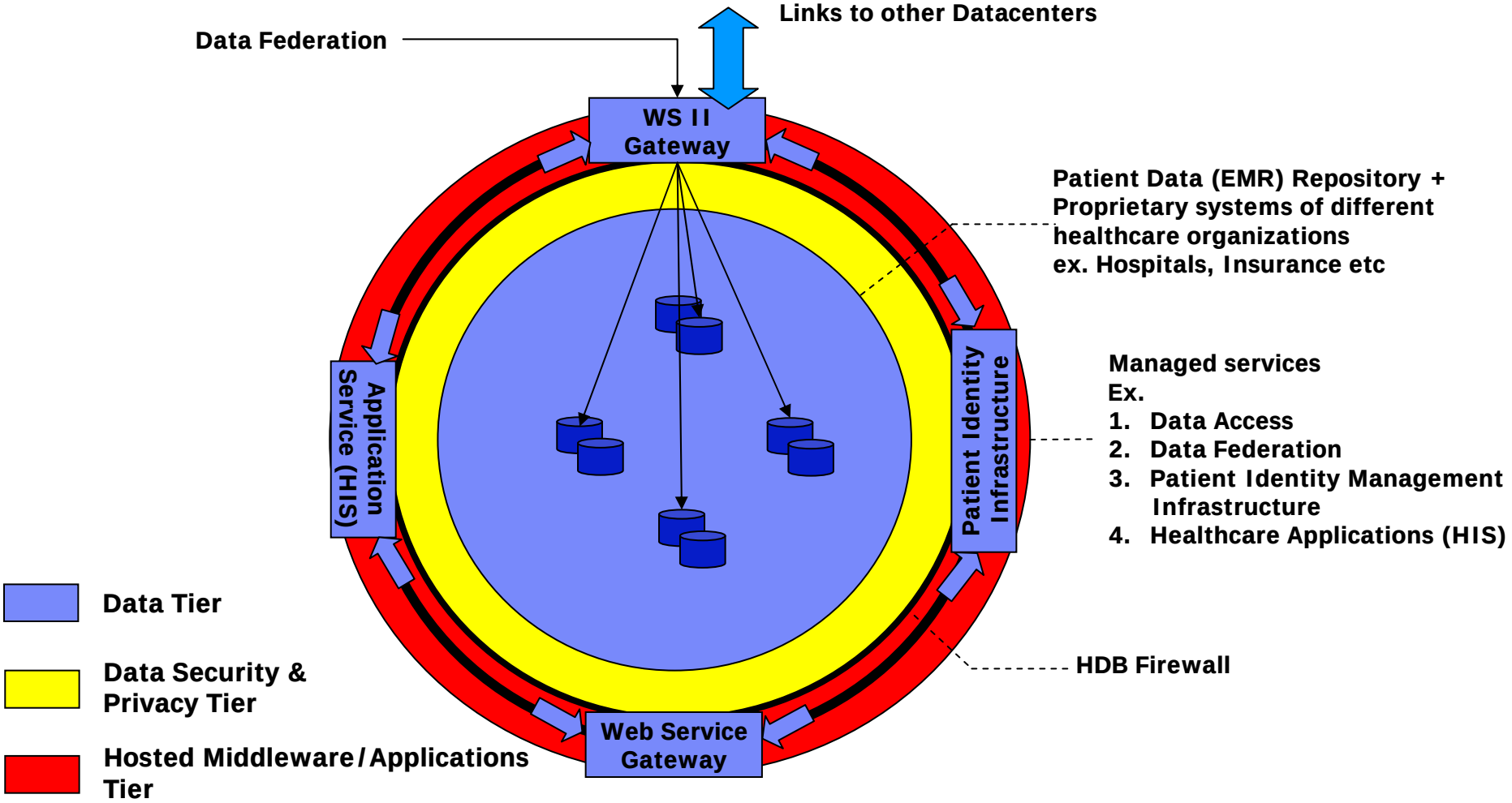
Healthcare Datacenter Stack



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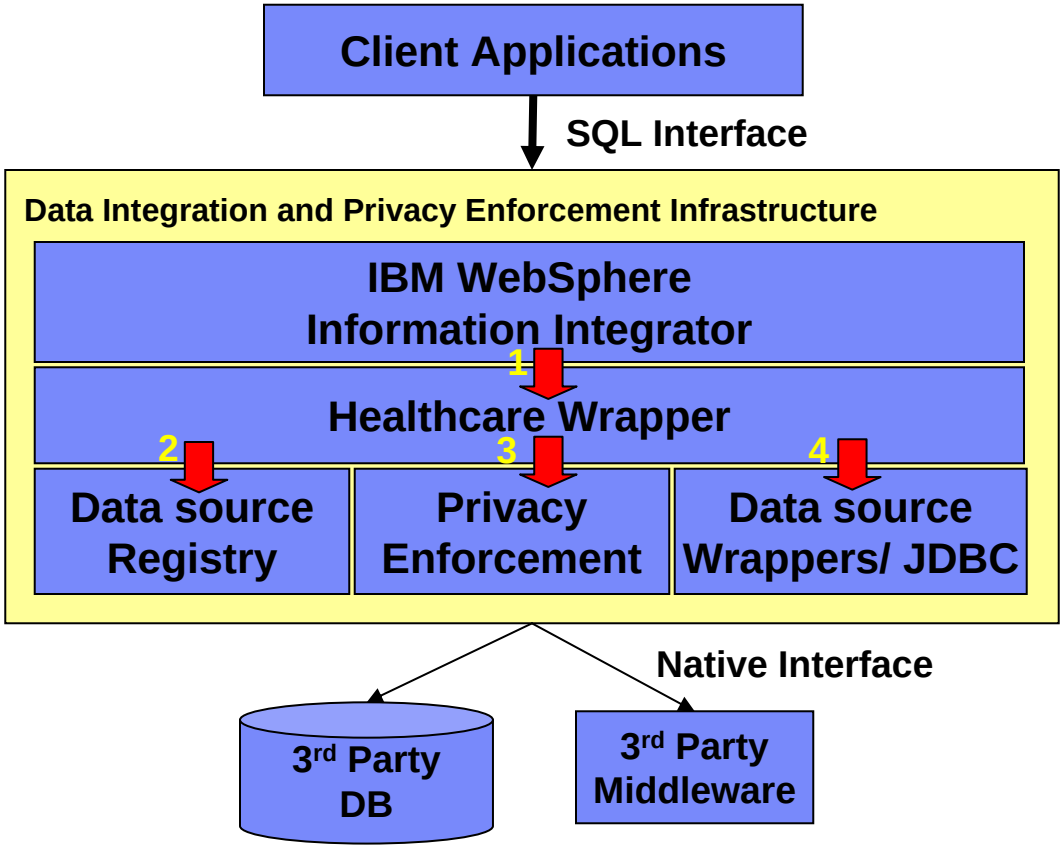
Data Integration & Privacy Enforcement Architecture



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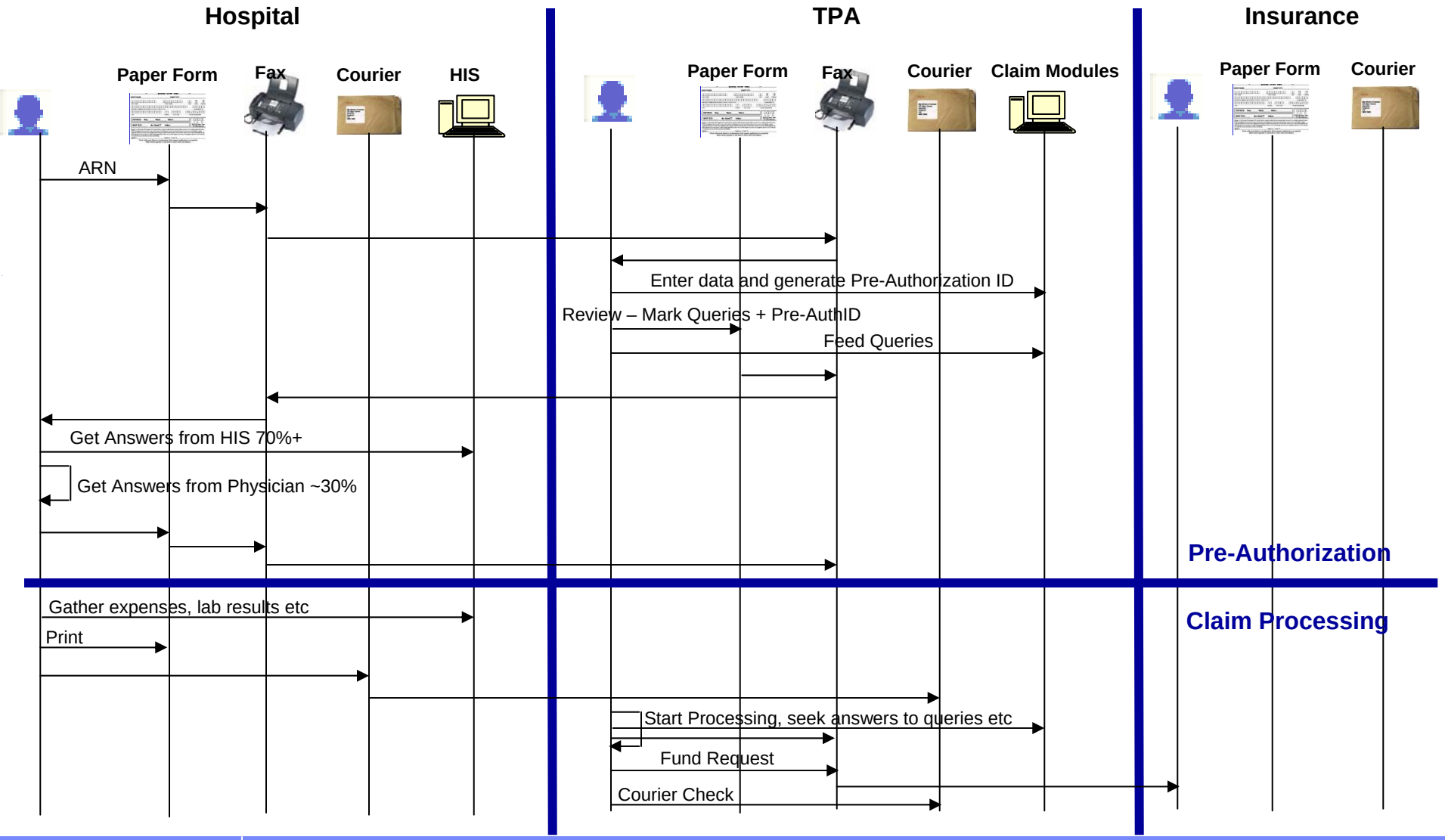
Claim Processing Sequence Diagram



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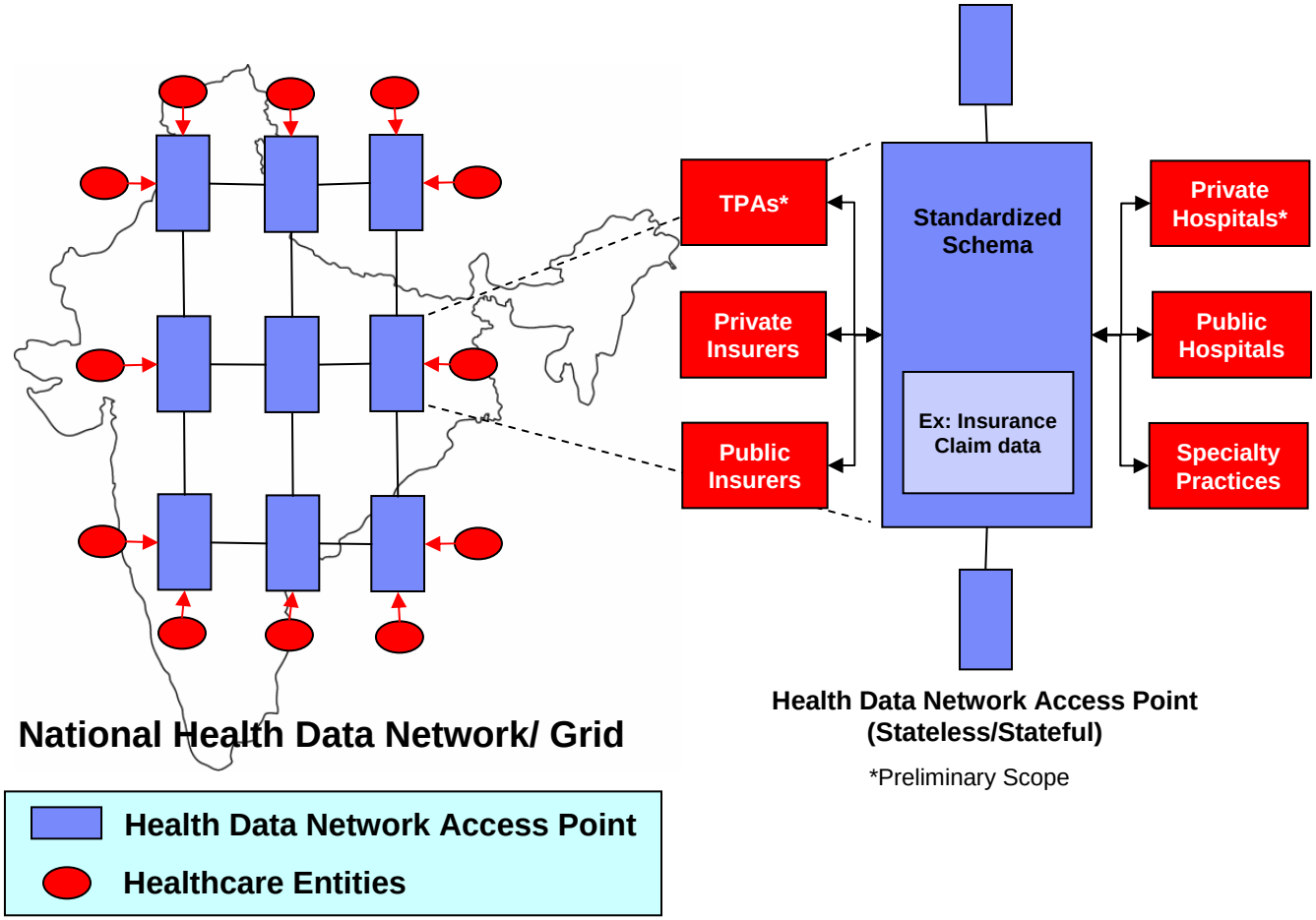
Repository Based Architecture



*Preliminary Scope

Health Data Network Offers:

1. Standard data model over relational Schema.
2. SQL interface and query capability to aggregate data across desperate data sources allowing easy & rapid EAI.
3. Flexible (persistent/non-persistent) communication channel among multiple health care entities.

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