

Re-defining Registry Architecture

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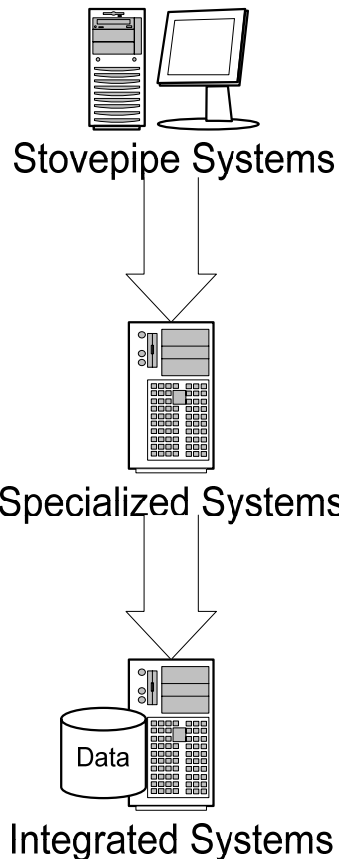
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Public Health Systems



- Began as program-specific, stovepipe systems, often PC- or mainframe-based
- Evolved into more robust specialized systems
- In some cases became integrated systems, either patient-centric or case-centric



From Integration to Interoperability

“Interoperability is the ability of two or more systems or components to exchange information and to use the information that has been exchanged.”

HL7 EHR Interoperability Working Group



Benefits to Public Health of HIE Participation

- Many of public health's data trading partners will choose to interoperate with an HIEN and reduce (or eliminate!) superfluous connections
- Public health can gain access to data and trading partners who previously might not have participated in its initiatives
- Better to be an insider than an outsider: Public health risks being left out as the medical community moves ahead



Risks to Public Health

- Public health applications targeted at these users may have slower uptake as organizations encourage (or require) users to stay with institutionally-supported applications
- Pressure will build for providers to interoperate solely through HIENs
- Public health systems run the risk of becoming focused as data repositories as users over time lose access to their distinctive features
- While many specialized features are part of the approved HL7 EHR specification they are not *required* for CCHIT certification



Three Imperatives for Public Health:

1. Embrace national standards for system interoperability
2. Enable “special functions” of public health systems to be accessed directly by user systems
3. Organize an informatics focus in the agency to engage in and support local, regional and national initiatives.



Standards Initiatives

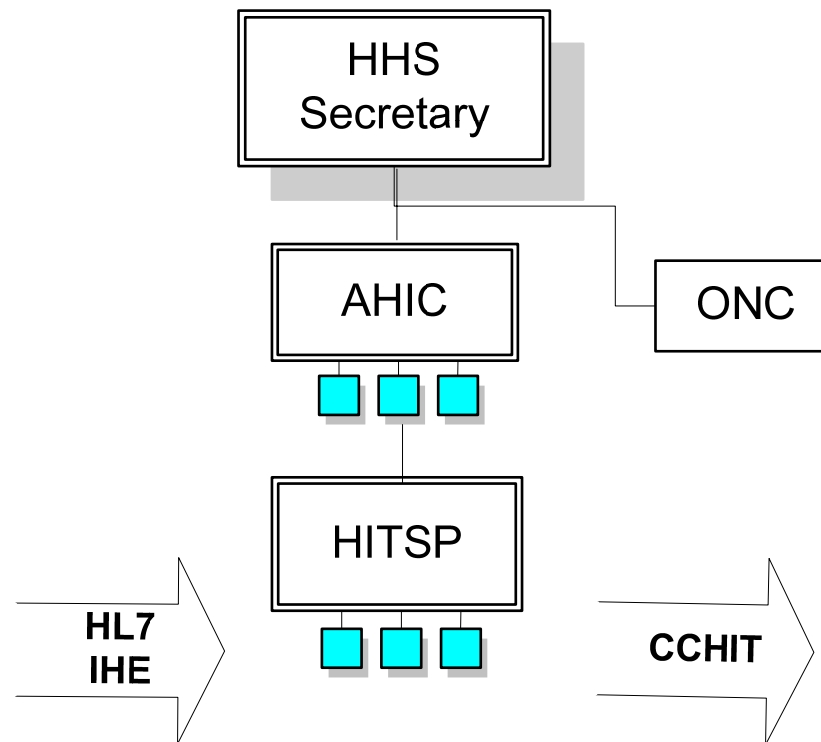
- Health Information Exchange
 - American Health Information Community (AHIC)
 - Health Information Technology Standards Panel (HITSP)
 - Health Information Security and Privacy Collaboration (HISPC)
 - Nationwide Health Information Network Cooperative (NHIN)
- Federal/State/Local Systems
 - Consolidated Health Initiative (CHI)
 - Medicaid Information Technology Architecture (MITA)
 - Public Health Information Network (PHIN)



More Initiatives

- Certification Commission for Health Information Technology (CCHIT)
- Industry Interoperability
 - Health Level 7 (HL7)
 - Integrating the Healthcare Enterprise (IHE)
- Agency/Jurisdiction Standards and Policies

Hierarchy of Alphabet Soup

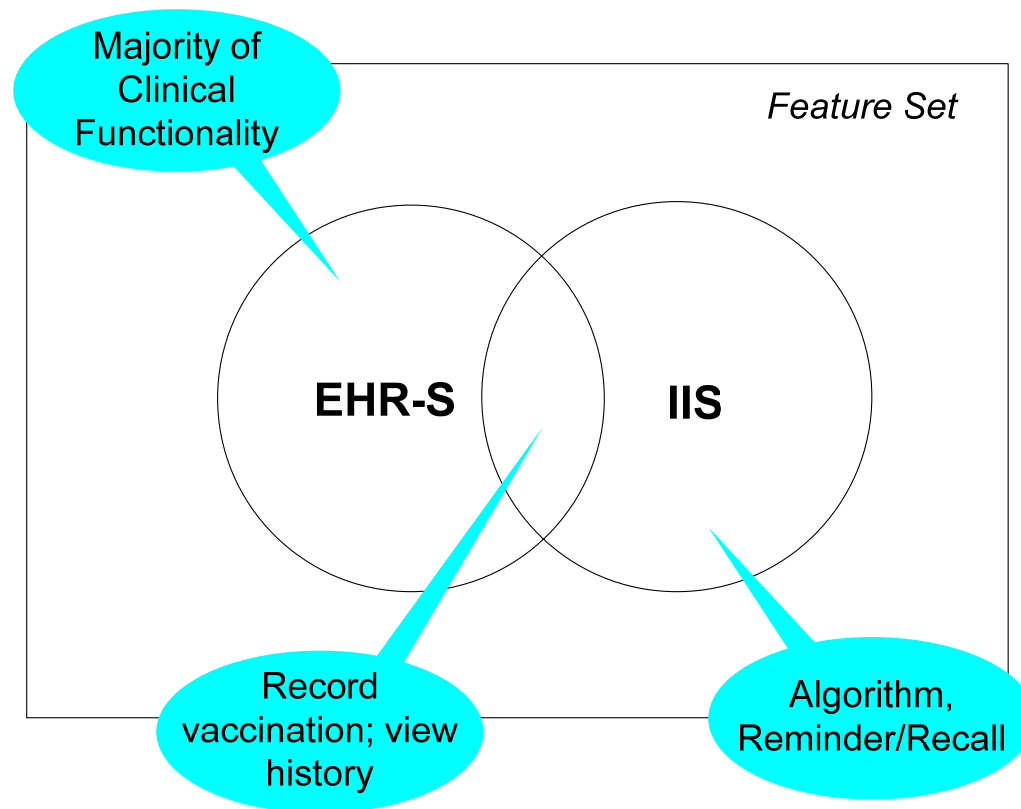




Enable Special Features: An Example

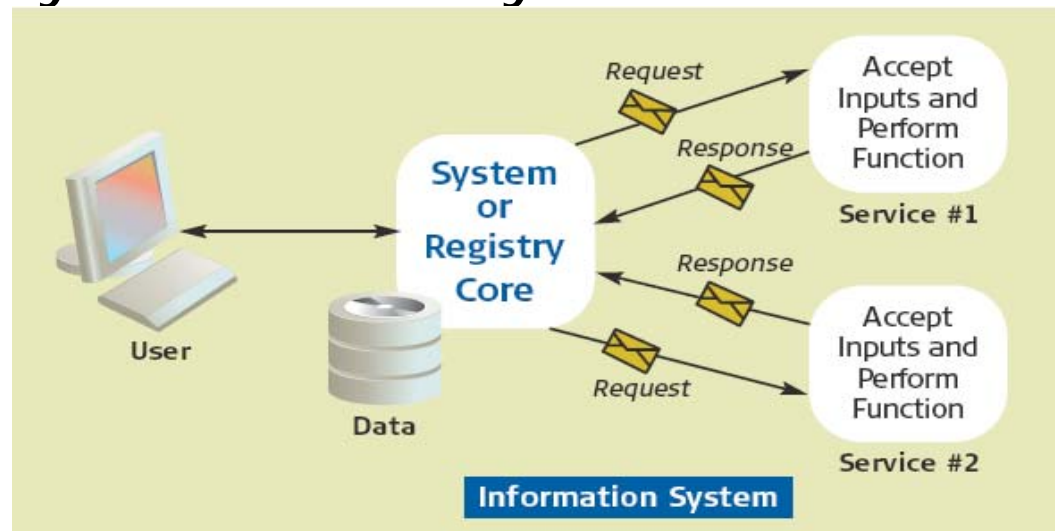
- Immunization Information Systems (IIS) serve a jurisdiction by providing a common repository for immunization information
- IIS provides specialized features not typically found in an EMR, like:
 - Recommendations of next immunizations due
 - Reminder and recall to ensure that patients return
 - Vaccine ordering and order processing
 - Practice-level assessment of up-to-date status

IIS – EHR-S Tension



Enable Special Features: One Suggested Solution

Service-oriented Architecture (SOA): a building block approach to systems design that allows discreet functions to be accessed by any authorized system

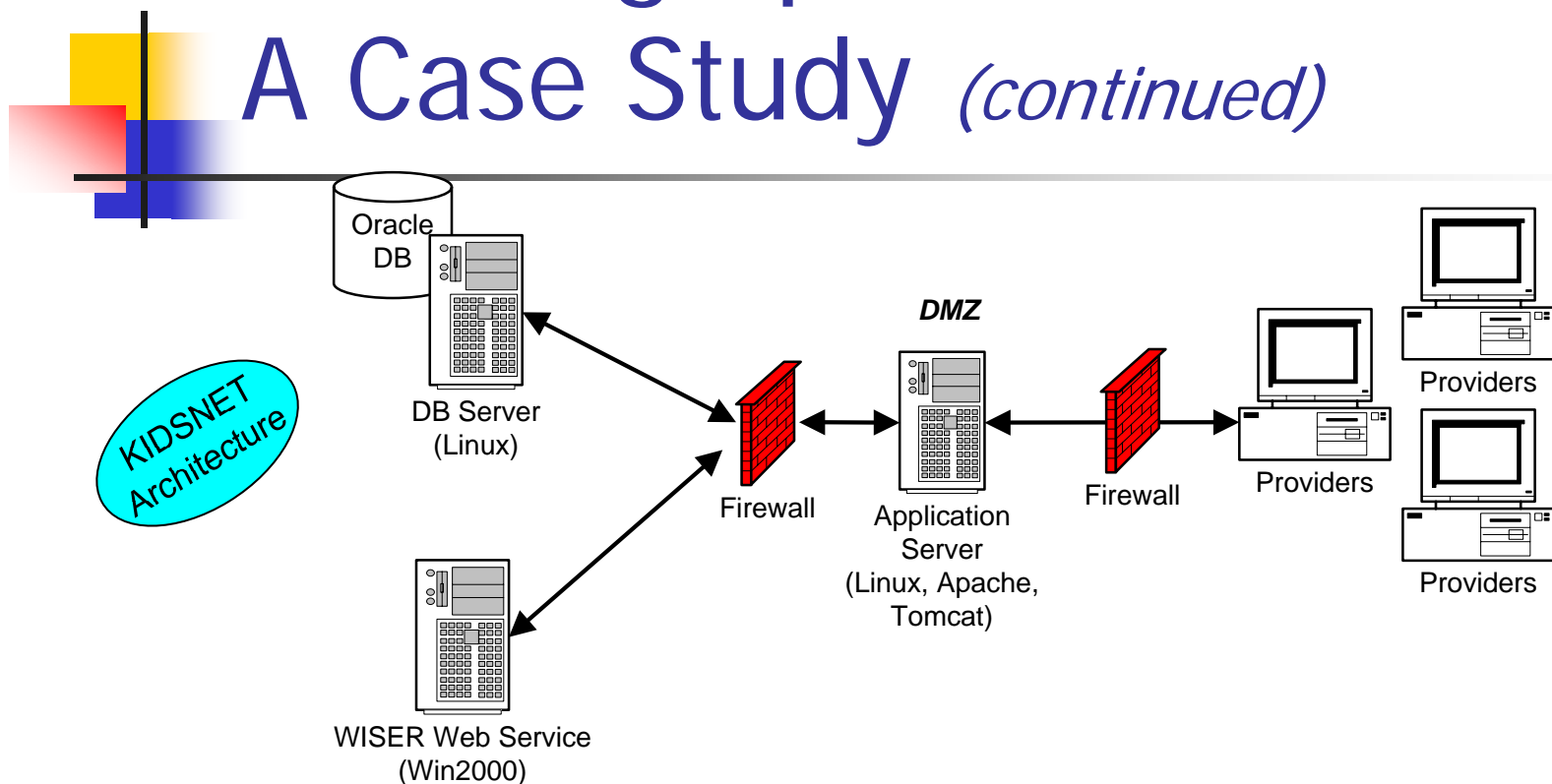




Enabling Special Features: A Case Study

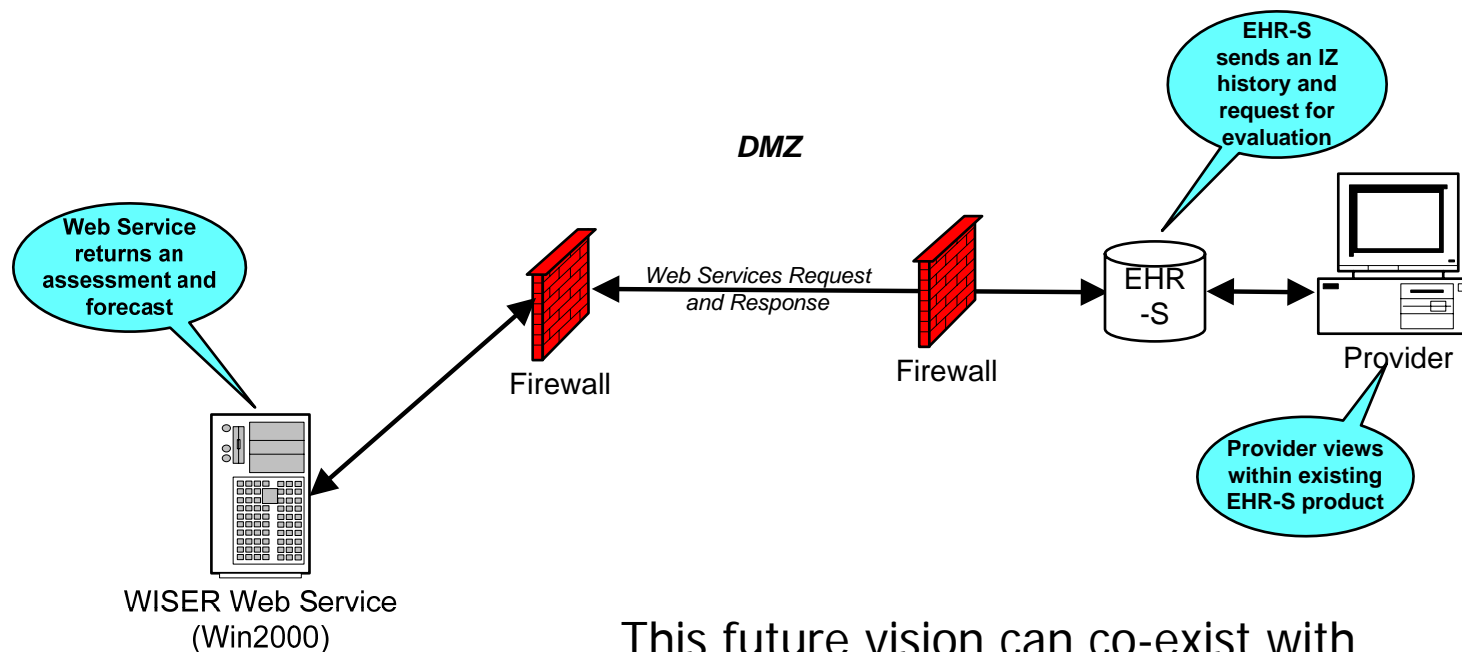
- KIDSNET, the integrated child health system in RI, did not have a robust immunization predictor algorithm
- Decided to use a version of the algorithm developed in CA (with permission)
- Deployed algorithm as a web service rather than absorbed into KIDSNET
- Other applications could now easily make use of the service

Enabling Special Features: A Case Study *(continued)*



- Web service is called in real time from KIDSNET application when needed.
- Core KIDSNET system (Linux/Oracle) interoperates with Microsoft-based Web Immunization Service Evaluation and Recommendation (WISER) without issue.

Extending Special Features: A Possible Future



This future vision can co-exist with the previous model: Web service can interact with IIS *and* provider EHR systems



Informatics Focus

- Strategic, not tactical
- Reporting to a senior agency official
- Links to academic informatics programs
- Links to appropriate associations (*e.g.*, AMIA , HL7, HIMSS)
- Example: CDC National Center for Public Health Informatics (NCPHI), MN Center for Health Informatics



Selected Readings

- Noam H. Arzt with contributions by Susan Salkowitz, *Evolution of Public Health Information Systems: Enterprise-wide Approaches*, July 2007.
<<http://www.hln.com/assets/pdf/UT-White-Paper-Final.pdf>>
- Patricia Gibbons, et al, *Coming to Terms: Scoping Interoperability for Health Care*, Health Level 7 Electronic Health Record Interoperability Work Group, February 2007.
<<http://www.hln.com/assets/pdf/Coming-to-Terms-February-2007.pdf>>
- Noam H. Arzt, Response to Request for Information, *Development and Adoption of a National Health Information Network*, Department of Health and Human Services, Office of the National Coordinator for Health Information Technology, January 18, 2005.
<<http://www.hln.com/noam/ONCHIT-RFI-HLNConsulting.pdf>>



Selected Sources

- CCHIT: <http://www.cchit.org/>
- Connecting for Health (Markle Foundation):
<http://www.connectingforhealth.org/>
- eHI: <http://www.ehealthinitiative.org/>
- HITSP: <http://www.hitsp.org/>
- HLN: <http://www.hln.com/resources/>
- NCPHI: <http://www.cdc.gov/ncphi/>
- ONC: <http://www.hhs.gov/healthit/>
- PDHSC: <http://www.phdsc.org/>
- PHII: <http://www.phii.org/>



Selected Technical Sources

- HL7: <http://www.hl7.org/>
- PHIN: <http://www.cdc.gov/phin/>
- SOA: <http://www.webservices.org/>
- WWW: <http://www.w3.org/2002/ws/>