

Evolution of Data Exchange with the New York Citywide Immunization Registry: From Paper to Electronic Messaging

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National Immunization Conference

Overview of NYC

- ~125,000 births annually
- 1,248 pediatric provider sites
 - 81 public
 - 1,167 private
- ~30 managed care organizations
- Mandatory reporting of immunizations administered to children age ≤ 7 years

Initial Methods of Data Exchange

- **Reporting:**

- Files were downloaded onto disks or tapes and mailed to DOH data processing vendor
- Paper forms also mailed to vendor and files were generated and processed
- Many steps and manual interventions required for processing

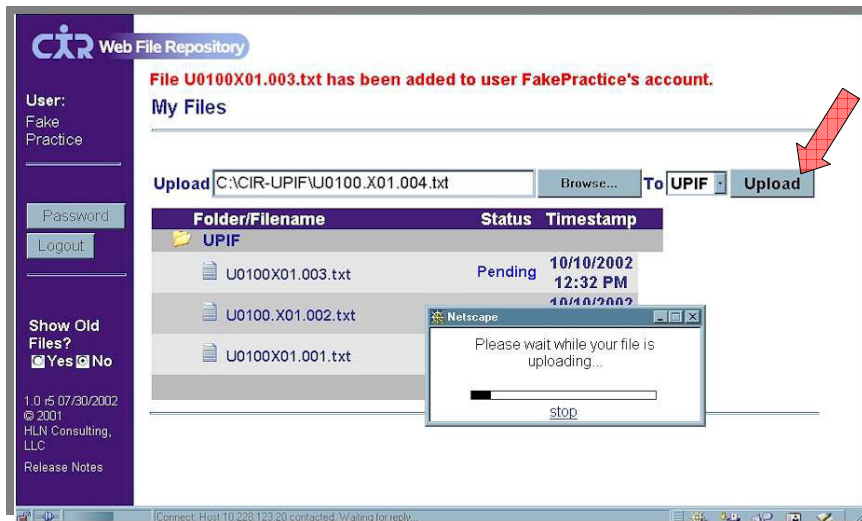
- **Access:**

- Data Exchange Interface (DEI) run by operations vendor upon DOH request
 - Output file mailed back to partner organization
- Issue immunization records in response to requests via phone, fax, mail

Current Methods of Data Exchange

- Web File Repository (WFR) for batch electronic submission, data quality feedback, and retrieval
 - Reduced response time and less manual intervention
- **Reporting:**
 - 30,000 paper forms per month are key entered and an electronic file is created and submitted through WFR
 - Facilities also perform extracts from their information systems and submit an electronic file through WFR
 - Online Registry for additions of current and historical immunizations

Uploading Files

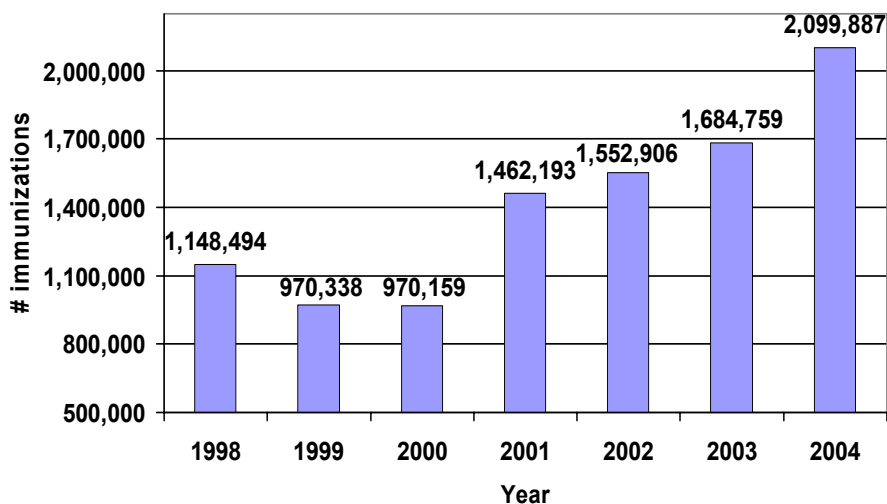


Immunizations inserted into CIR since January 1, 2004

Method of reporting	%
Paper	46.4%
Electronic file extract in batch	45.5%
Online Registry	8.1%
Total	100%

Immunization Reporting Statistics

Number of non-historical immunizations inserted in CIR
1998-2004



Current Methods of Data Exchange

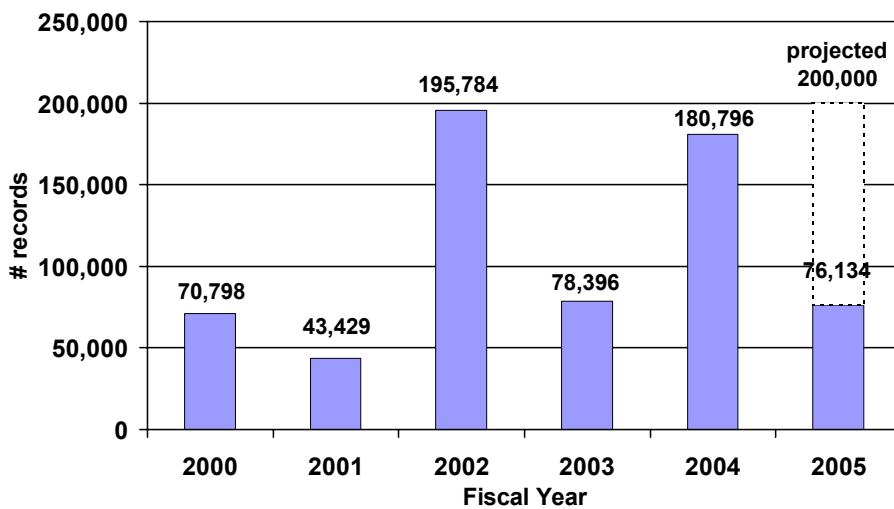
- **Access:**
 - Improved batch data exchange interface
 - Online Registry for viewing immunization history and immunization schedule recommendations
 - Issue immunization records in response to requests via phone, fax, mail

Records accessed by CIR partners in 2004

Method of access	%
Online Registry	50.4%
Electronic file extract in batch	46.4%
Phone, fax, mail	3.2%
Total	100%

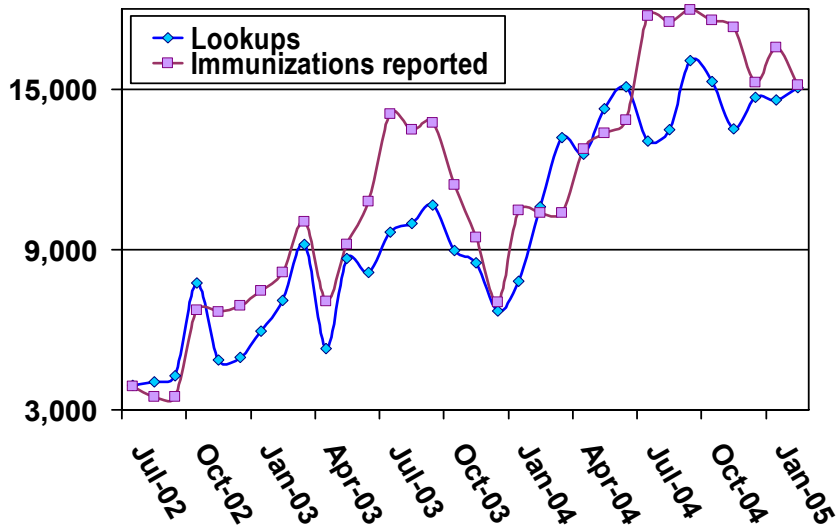
Batch Data Requests

Records requested in batch: 2000-2005



Online Registry Usage Statistics

CIR On-Line Registry Use 2002 to date

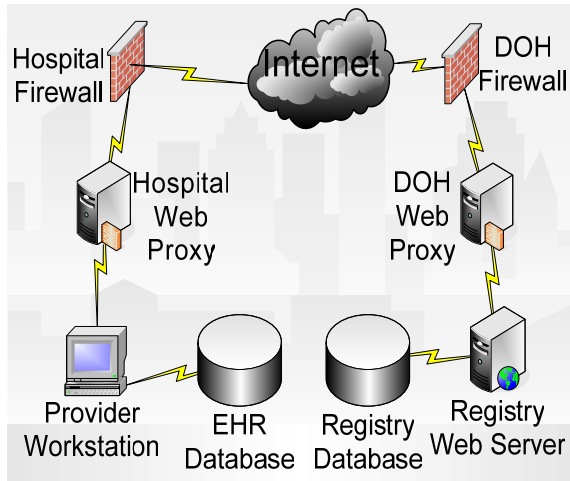


Real-Time EHR Integration With Immunization Registry

- New CIR Development intended to increase data exchange for healthcare provider use
- **Access - Phase 1:** Provide current immunization registry and decision support information to doctors in their healthcare facility's system
- **Reporting - Phase 2:** Enable real-time reporting from doctor's system

CIR Real-time Integration

- SOAP/XMLP Web Service using existing network infrastructure
- Interoperable, portable, secure, thin client
- Supports HL7 VXQ request and VXR response (also supports simpler non-standard interface)
- Currently in test with one pediatric EHR (Office Practicum)



Challenges in All Data Exchange Projects

- **Coordination:** Between healthcare facility, EHR vendor, and DOH (varies by facility and EHR developer)
- **Standards:** Vaccine code sets and electronic data input/output formats not always standard; translation may be required
- **Consolidation:** Differences in immunization events between EHR and Registry
 - Is the difference clinically significant?
 - Which source of information is more authoritative?
 - Should the clinician decide which shot to keep?

Future Work

- Deploy new batch data exchange software that uses probabilistic patient search tools in CIR
- Consider implementing probabilistic searches for CIR patients in Online Registry
- Consider implementing probabilistic searches for real-time EHR integration queries
- Add decision support recommendations to real-time immunization request SOAP/XMLP interface
- Add HL7 VXU (unsolicited vaccination record update) support to CIR real-time SOAP/XMLP interface

Conclusion

- NYC CIR data exchange mechanisms have evolved over time
- Demands for more data and increased timeliness have spurred advances in data exchange technology
- Reporting done mostly on paper or through large electronic extracts
- Access done mostly through the Web or through large electronic data exchange requests
- Seamless real-time integration with facility and provider EHRs has the potential for more electronic data exchange growth in the coming years

Contact

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