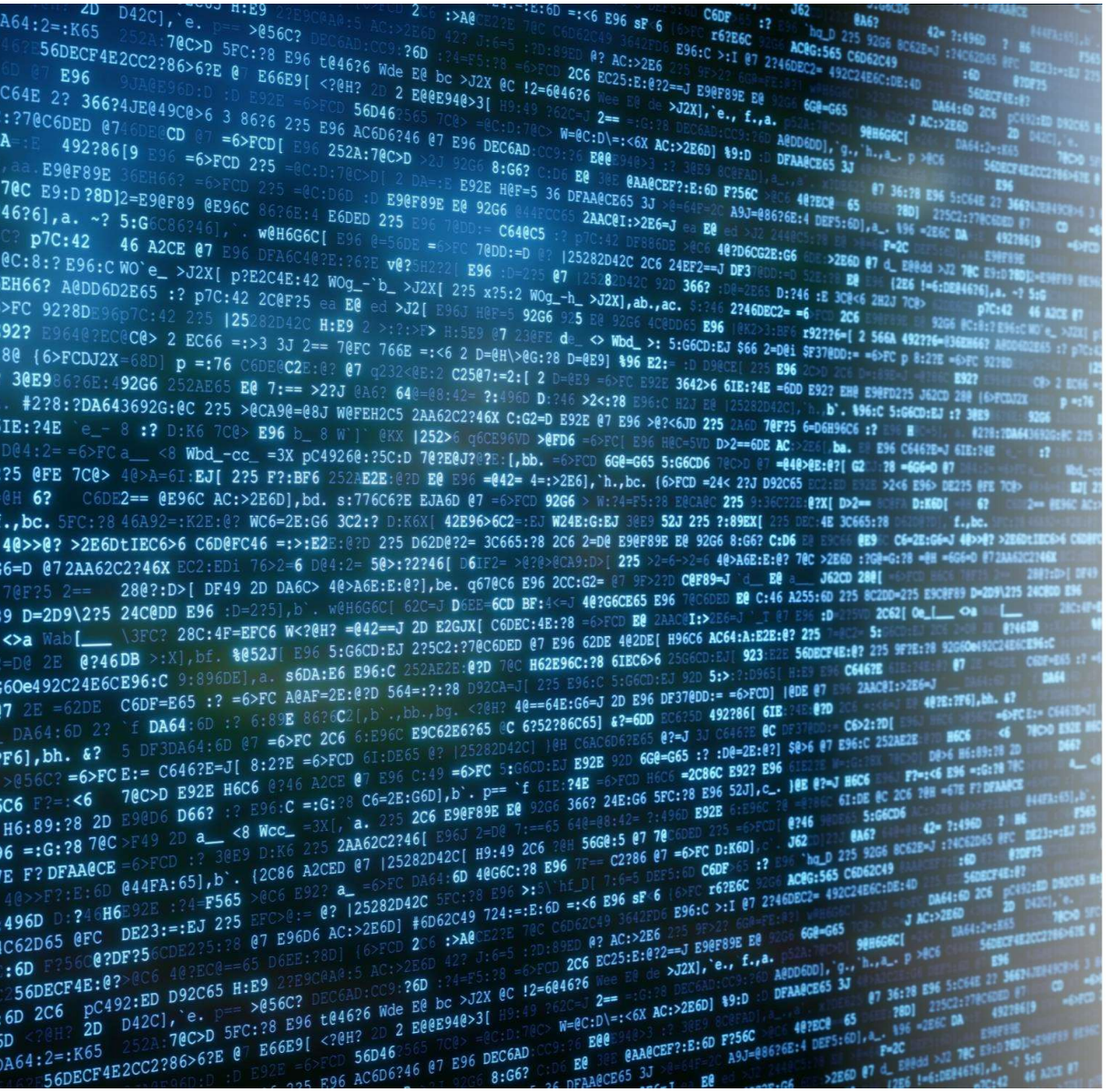
J P Systems Capabilities

Our mission: to standardize, manage, and improve the interoperability and usability of data.

J P Systems
Core Capabilities

- Innovative Inter-Agency Data Exchange
- HL7 Data Standards Consulting
- Clinical Reference Terminologies
- Data Quality Improvement
- Healthcare Informatics
- Healthcare IT Strategy & Policy
- Enterprise Architecture



About Us

J P Systems is a Woman Owned Small Business (WOSB) founded in 1983 with over 120M in Federal past performance.

What do we do?

Our mission is to standardize, manage, and improve the interoperability and usability of data.

J P Systems Solutioning

- Automate reporting of immunization data to state registries exchange.
- Automated reporting of COVID-19 Immunization Adverse Events to the FDA from fax transmissions to HL7 FHIR R4 RESTFul Message payloads.

Our Health Informatics Solutions

HL7 Standards Consulting: FHIR® & C-CDA	HL7 FHIR® Implementation Guides	Standardized Clinical Terminologies	Data Standards Development
Data Quality Improvement	Data Management & Standardization	Clinical Process Analysis	Interoperability Planning
Stakeholder Engagement	Business & Enterprise Architecture	Data Modeling	IT Strategy & Policy

J P Systems Data Standards Capabilities

HL7 data standards development & advice for implementors.

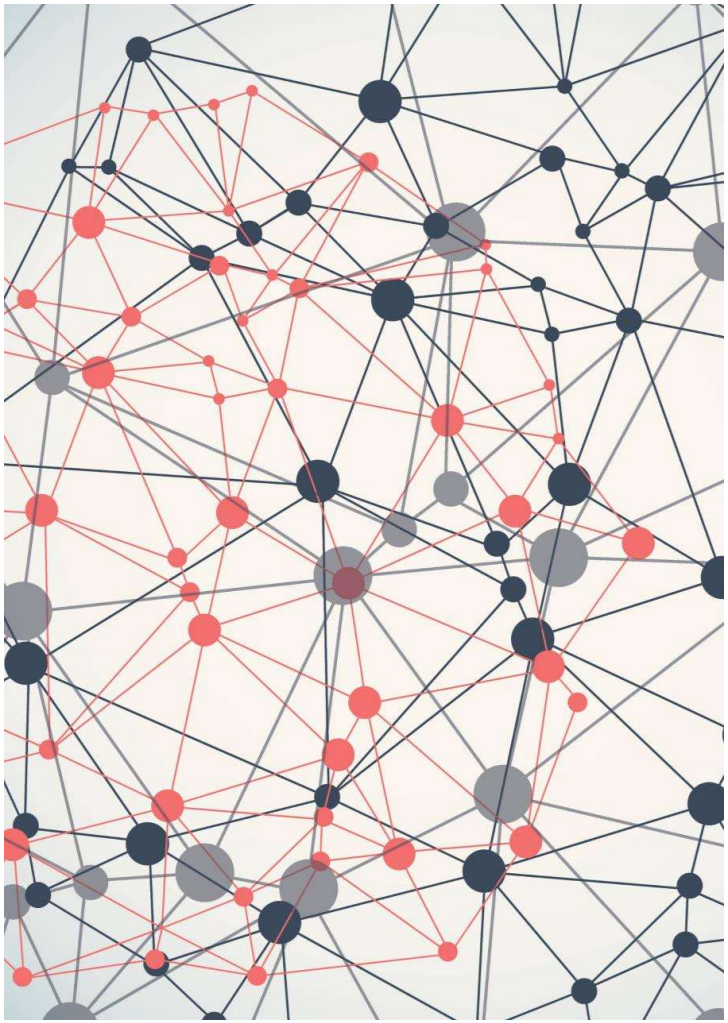
JPSys helps clients influence international data standards for exchange.

We have worked on multiple FHIR® API pilot projects and implementation guides (IGs)

Clinical terminology consultations- SNOMED CT, MED-RT, RXNORM, FHIR®, CVX, CLINICAL & LAB LOINC, CPT, ICD10, HCPCS & UCUM

Galen Mulrooney, FHL7

Jay Lyle, FHL7



J P Systems Clinical Terminology Services

Our clinical terminology consulting services at JPSYS cover many facets of healthcare and EHR systems. Terminology support work includes terminology matching, terminology models, terminology data standards development, the curation of data sets and values, maintenance of data sets and many other services.

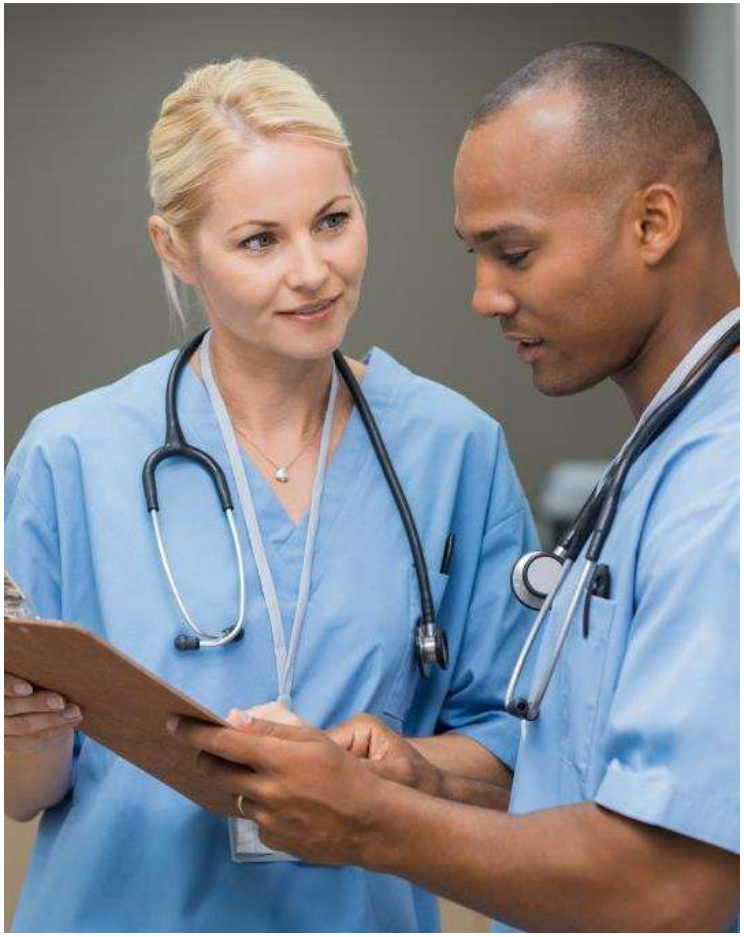
We provide continued maintenance, mappings and support of:

- Medication Reference Terminology (MED-RT) and MED-RT Established Pharmacological Classes (EPCs)
- Joint Language Viewer (JLV) Patient Matching
- Clinical Health Data Repository (CHDR)
- VistA Lexicon
- New Term Rapid Turnaround (NTRT)
- National Problem List (NPSL)
- VA SNOMED-CT extension

Clinical Data Quality Improvement

Our clinical data quality teams include clinicians, informaticists, terminologists, standards experts, and data analysts. We analyze 3 types of errors called “The 3 M’s”:

1. Missing Data
2. Miscoded Data
3. Misplaced Data



Data Quality Problem #1: Missing Data

PROBLEM: Patient information is missing because it wasn't available for the receiving system to consume.

- Cause? Different coding systems, unreliable messaging system or practices, or data never entered.
- Commonly happens with chemistry lab results.

SOLUTION: Our data quality team includes multi-disciplined staff to investigate the root cause of missing data.

Data Quality Problem #2: Miscoded Data

PROBLEM: Even when coded, the same data can be coded differently.

- I might use a different coding system than you do. If so, we can't interoperate.
- This problem is exacerbated when data crosses international borders. For example, U.S. requires RxNorm, but Australia requires Australia Medicines Terminology (AMT).

Some coding systems are very complex. The casual user can easily choose an inappropriate code, or two organizations may use a different code for the same thing.

- e.g., LOINC has > 400 codes for "blood pressure"

SOLUTION: Standardize the local terms and use U.S. FHIR Core.

Data Quality Problem #3: Misplaced Data

PROBLEM: Data is often stored in the wrong field in a data exchange message.

- For example, users enter patient's temperature into the weight field. Therefore, everyone weighs about 98 lbs. A computer would not reject a value of 98, but a clinician would spot an incorrect trend.

SOLUTION: A team of clinicians reviews data and identify these anomalies. Then our stakeholder outreach team meets with the organization's data quality team to teach them how to engage users to address these issues. The organization's data quality team then meets with their clinicians to explain problems.

Health Informatics Solutions for Interoperability

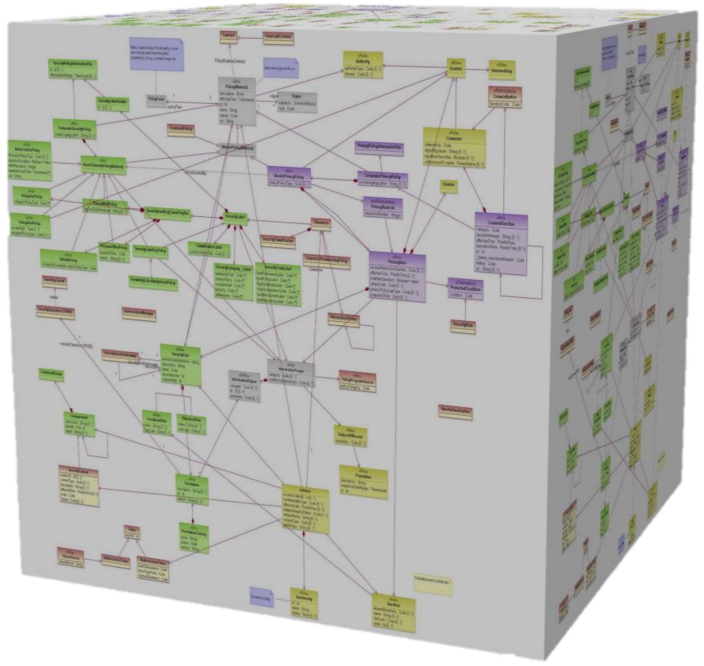
Data must move safely –

Clinical Data Management in a Complex World

- For patient safety, local data must be mapped to international standardized terminologies such as SNOMED CT, LOINC, RxNorm, etc. If data is not standardized, it cannot be transmitted and safely used outside the organization that created it.
- Although two organizations might use the same EHR system, that does not mean they can interoperate! To remedy this, we need "Implementation Guides," which are specifications on how to further constrain the standard when sending data.
- We create Detailed Clinical Models, which represent specific clinical concepts bound to standardized terminologies.

Clinical Data Models

After 15 years of collaboration with multiple subject matter experts, we produced 39 clinical domain models to create the Federal Health Information Model.



Domains of the Federal Health Information Model

Adverse Event Reporting, Allergies
Assessment (Mental Health and all other)
Audiology and Speech Pathology
Behavioral Health, Blood Bank
Care Plan, Clinical Decision Support
Clinical Document, Clinical Observations
Common Product, Consultation
Data Types, Dental
Detailed Clinical Models, Dietetics
Encounter, Enrollment, Eligibility and CoB
Health Concern, Home-Based Primary Care
Imaging, Immunization
Laboratory and Lab Result Reporting
Medication Administration, Oncology
Registry
Orders, Patient Education
Person Demographics, Pharmacy
Prosthetics, Provider
Public Health Reporting
Security and Privacy
Social Work
Spinal Cord, Surgery
Vital Signs and Woman's Health

These 39 domains can be adapted by anyone to suit the needs of the organization.

See the model at FHIMS.ORG

Client Success Story

J P Systems' Work

The Vermont Oxford Network (VON) with 1,200 member neonatal facilities world-wide, wanted to reduce the burden on their members' data abstractors and improve confidence in data quality by standardizing their data element definitions to enable automatic export from EHRs

We outlined a program for realizing VON's business objectives, starting with analysis & assessment of the value propositions for VON and its partners. We made a key discovery: the need for flexibility in tactics for associations between infants & mothers.

Exceeding Expectations

We worked closely with VON's neonatologists to confirm our understanding of VON's 129 data elements as we identified the appropriate tactics for representing them in current data standards for interoperability. When completed, the maps used over 20,000 concept codes from SNOMED CT, LOINC, ICD-10, UCUM, RxNorm, and HL7.

We coordinated validation of the clinical models by the member community and developed a technical roadmap options to plan a move to an HL7 FHIR® Questionnaire app for data collection. This FHIR app will pull data from each member facility's EHR in the form of FHIR resources, providing completed elements where possible and relevant data for manual completion where necessary. Any EHR that supports the ONC specifications for the 21st Century Cures Act can support this app.

Client Success Story

Client Need

Our Federal client's Health Information Exchange (HIE) network required analysis of massive amounts of incoming patient data from rapidly growing healthcare partners and providers. The new status quo had become unwieldy and new data quality issues arose with increasing frequency. Without the necessary data quality work on incoming clinical data, the value of their longitudinal patient record would diminish.

The incoming HIE query volume was exceptionally diverse. Their legacy system could not consume the new types of incoming HL7 message files available. Neither could they easily analyze or validate the new incoming messages.

J P Systems' Work

We analyzed their interoperability requirements, and we mapped their legacy systems to the fields in newer HL7 message standards so they could export and import new messages. This greatly expanded the types of standard HL7 messages which could be exchanged by their legacy systems. After testing, the new messages started flowing in and out.

Meeting and Exceeding Expectations

From a detailed examination of the incoming partner data, we traced root causes of errors coming into their legacy and replacement EHR systems. We worked diligently and diplomatically to educate the external exchange partners on how to improve their data quality.

We increased the interoperability of data in both quantity and quality and onboarded 22,000 new external data exchange partners. Now over 3 million patients and their external providers have access to more complete and accurate longitudinal patient records. Currently, we assess the network traffic to monitor bottlenecks and check for errors.

Contact Information

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