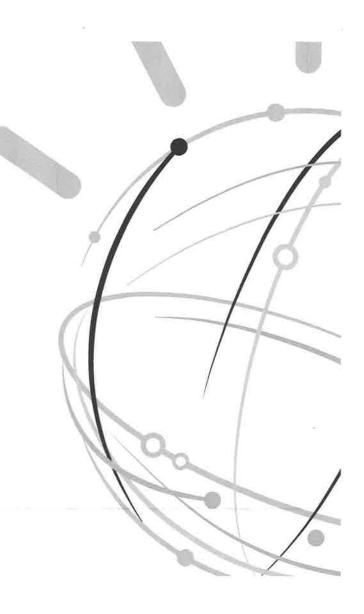
**BV** Watson Health

## Evolving Watson Health's Approach to NLP

Project Josephine



### Current approaches to NLP limit cognitive potential

Explore Nie oero marken and a como tra a

 Insufficient Accuracy: Clients report attributes found with NLP are often incorrect or missed, preventing sales

IBM

- Lack of Standardization: NLP developed by one team cannot be used by another and offerings addressing complementary steps in clinical workflow cannot be integrated
- Significant Overlap: 25% of developers across 12 projects are independently developing the same NLP

## Project Josephine addresses NLP quality, while Tiger Team centralizes NLP across Watson Health

### Project Josephine

- Improve Accuracy: Connect clinical expertise to development and enable machine learning approaches
- Standardize Terminology: Allow reuse of NLP and integration across projects to drive sales
- Reduce Overlap: 40% of NLP resources can be deployed to solve new problems

### Tiger Team

 Explore NLP centralization: NLP is too big and too complex for individual teams to address in isolation

### TEH

### Four projects define cancer four different ways

Example: Chronic Myelogenous Leukemia BCR-ABL1 Positive in Remission

Project we a	Concept Type 2 (10
MDA - OEA	Whole span as Disease_Type
Watson Drug Discovery	<ul> <li>Chronic Myelogenous Leukemia as Disease_Type</li> <li>BCR and ABL1 as Proteins</li> </ul>
Watson for Genomics	<ul> <li>Myelogenous Leukemia as Hematologic_Disease</li> <li>Chronic as Temporal_Concept</li> <li>BCR as Gene</li> <li>ABL1 as Gene</li> </ul>
Medical Sieve	<ul> <li>Leukemia as Lymphoid_Cell_Neoplasm</li> <li>BCR-ABL1 Positive as Disease_Subtype</li> </ul>

# Across Watson Health 90% of the same NLP tools are built independently between 4 to 12 times

Offering Name	Disease / Diagnosis	Finding	Symptom	Drug	Gene / Protein	Variant	Metric	Units	Lab	Anatomy	NLP Developers (per project)
Watson for Drug Discovery	*	*	*	*	*	*					7
EMR Cognitive Services	*	*	*	*	*	*	*	*	*	*	9
Watson for CTM	*	*	*	*			*	*	*	*	11
Watson for Oncology	*	*	*	*			*	*	*	*	11
Watson for Genomics	*	*		X	*	*					6
Watson for Patient Safety	*	*	30 h	*							6
Clinical Summary	*	*	*	*			*	*	*	*	6
Clinical Discrepancy Services	*	*	*	*			*	*	*	*	11
Real World Evidence	*	*		*							9
MD Anderson OEA	*	*	*	*	*	*	*	*			7
Gemstone	*	*	*	*							6
Explorys	*	*	*	*	*		*	*	*	*	8

# Project Josephine will focus on improving NLP quality, leading the way for NLP evolution across Watson Health

### Project Josephine



- 9 month project plan
- 4-6 Watson Health offerings

#### Objectives:

- Create one standardized ontology
- 1200-2000 high quality labeled documents
- Improve NLP performance
- Reduce overlap and improve attribute coverage
- Collect and report performance metrics frequently throughout project



### Tiger Team

#### Outline:

- Representatives from ALL Watson Health NLP Projects
- Leverage Project Josephine metric collection to aid in decisions

### Objectives:

- Explore Centralized NLP
- Access tools and platforms
- Consider team make-up and personnel