

Harnessing Data. Creating Valuable Insight. Powering Precision Medicine.

Big Data Analytics platforms enable the rapid integration of unstructured data to improve decisions through information enrichment. Up until now Precision Medicine efforts have been impeded by the vast amount of unstructured data researchers and clinicians could not access, integrate and analyze quickly.

Optra Health has developed the first Big Data Analytics platform, iPhronesis™. iPhronesis™ is a user friendly platform specifically designed for domain scientists and clinicians alike enabling analytics on raw un-curated data accessioned from publications, protocols, study records, EMR/ EHR's, images and other applications, to create dashboards for visualization and one-click customizable reports.

iPhronesis™ has the ability to revolutionize translational "bench to bedside" research, drastically speeding up the time in which drug discovery and clinical trials are performed, and drive new point-of-care guidelines through Evidence-based analytics.

iPhronesis™ Key Components:

❖ Data Analytics for Precision Medicine research

- ✦ Connects clinical work and research data seamlessly
 - ▲ Integrates medical records, bioinformatics databases, imaging systems (image atlases, RIS/PACS)
- ✦ Predefined Reports & Visualization Tools
- ✦ One-click customizable reports

❖ A modular approach to Predictive Analytics

- ✦ Data Aggregation (EMR/EHR, 100+ interfaced data sources, etc.)
- ✦ Knowledge Automation (curate millions of publications, machine learning, NLP querying for ease of use)
- ✦ Customizable Workflows

❖ Secure Workflow

- ✦ Authenticity validators
- ✦ HIPPA compliant

❖ Disparate data source integration: Works with SQL, CSV/TSV, XML, JSON, BSON etc.

❖ Scalable Data store: SQL and NoSQL Databases

❖ Advanced Deployment: Cloud

❖ Mobility interfaces

❖ Advanced Technology Core: Big Data environment, Python, Scala, REST APIs and many more

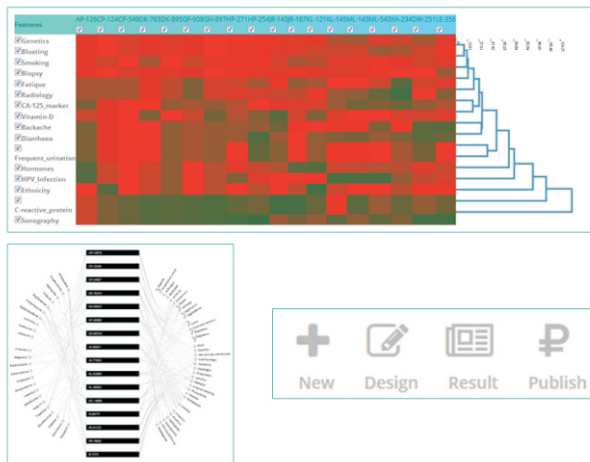
❖ Professional services : Seamless enterprise integration

iPhronesis™ Big Data Analytics Use Cases

❖ Clinical Genomics

Develop clinical grade workflows, integrate with reference databases and generate complex pipelines with extreme scalability for genomics applications.

- ✦ Cancer Genomics
- ✦ Diagnostic Odyssey
- ✦ Genotype- Phenotype Studies
- ✦ Text mining powered advanced interpretations
- ✦ Interactive Pathway Mapping
 - ✦ NGS Variants Analysis with Ontologies, Semantics & Taxonomies



❖ Digital Drug Discovery

Reduce the time for drug discovery using advanced data models and visualizations and connect to data from valuable sources such as EMR and many more.

- ✦ Drug Repurposing
- ✦ Drug Discovery
- ✦ Cohort Design
- ✦ Smart Clinical Trial Design
- ✦ Efficacy & Toxicity Prediction

❖ Evidence-based Medicine

Instantly cross-link data from multiple systems, generate insights and provide actionable items for:

- ✦ Longitudinal Patient Views
- ✦ Clinical Decision Support System
- ✦ Evidence Based Medicine
- ✦ Precision Medicine
- ✦ Personalized Cancer Treatment
- ✦ Regulatory Compliance Policy Design
- ✦ Health data predictions

