A Secure Platform for Rapid Deployment of Precision Medicine Tests, Including Pharmacogenomics

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Background

- Pharmacogenomics (PGx) is the study of how genetic variants can affect drug metabolism, pharmacokinetics, and pharmacodynamics
- PGx testing enables optimization of treatment options for patients by
  - optimizing medication
  - refining dosing
  - minimizing adverse reactions
- Clinical considerations for PGx testing
  - Accuracy of results
  - Rapid turnaround time (TAT)

Clinical Use Cases

- **Warfarin (Blood thinner)**: Variants in CYP2C9, CYP4F2 or VKORC1 may result in altered systemic concentrations and therefore affect dosage.
- **Celebrex (analgesic)**: Variants in CYP2C9 may result in altered systemic concentrations and therefore affect dosage.
- **Irinotecan (colon cancer)**: UGT1A1*28 variant is associated with life threatening toxicity.

Clinical Deployment

- PGx testing can occur before a drug is prescribed, during treatment to adjust dosage, or to stop a particular treatment for safety reasons.
- A critical challenge with deploying PGx testing is an effective clinical decision support (CDS) system to provide **timely information** to the healthcare provider to assist in treatment planning.

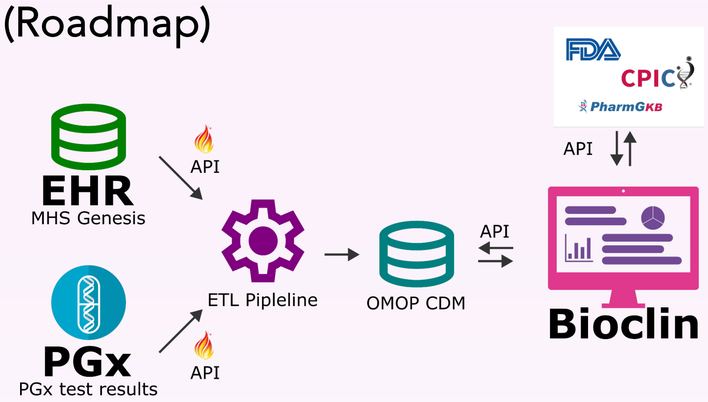
BIOCLIN: CDS Platform

- Secure, flexible, cloud-based software suite designed to overcome deployment bottlenecks in precision medicine testing for the clinic
- **Multimodal data**: Handle all types of ‘omics data
- **Flexible**: Supports custom ML and AI model integration
- Currently in production for an RNA-seq based biomarker-based Phase II clinical trial (OPTIC RCC)

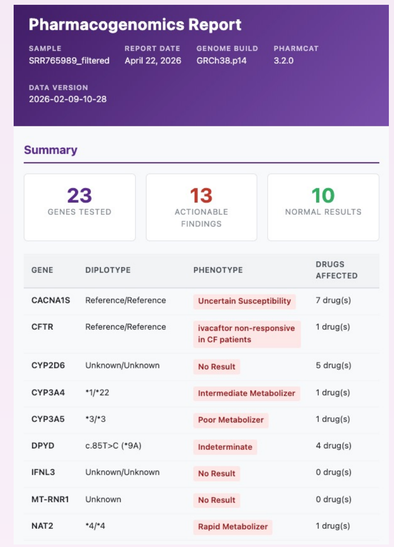
BIOCLIN-PGx Deployment

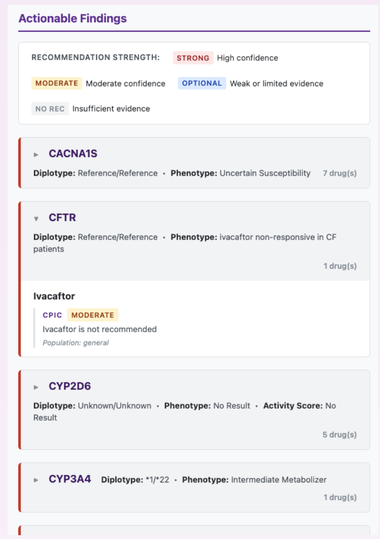
- Web-platform with custom ingestion/reporting
- Integration with EHR (roadmap)

BIOCLIN-PGx Integration with EHR (Roadmap)



BIOCLIN-PGx Report





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