Integrating the Latest in Genomic Science into Modern Medical Practice

Mayo Clinic and the Center for Individualized Medicine
Our Primary Value
The needs of the patient come first
After 150 years...

5 SCHOOLS
2,580 RESIDENTS & FELLOWS
4,100 STAFF PHYSICIANS & SCIENTISTS
60,000 EMPLOYEES
$250 million NIH Funding
After 150 years...

6 STATES

1.3 million PATIENTS from 144 countries

4.9 million OUTPATIENT VISITS

394 million UNIQUE WEB VISITS on mayoclinic.org

$9.7 billion ENTERPRISE reinvests $440 million
The Center for Individualized Medicine *discovers* and *integrates* the latest in genome based knowledge to *personalize care* for each Mayo Clinic patient.
Individualized Medicine Clinic
Advanced Cancers / Diagnostic Dilemmas

Referral into IM Clinic

- Referral to Mayo Clinic
  - Genomic counseling
  - IM Consultant (MD) meets patient
  - Genomic Board conducts preliminary review of patient
  - Genomic counseling
  - IM Consultant (MD) meets patient
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- Bioinformatics analyzes, generates report
- Results presented to Genomic Board
- Results and possible treatment options returned to patient

Cancer

Half of patients with advanced cancers found a sequencing-based druggable target

Diagnostics

30% of patients with rare and heritable disorders received definitive diagnoses

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500+ Patients
Drug-Gene Rules
The Right Drug and the Right Time

Alert at point of care in EMR
- Reduce side effects
- Increase effectiveness
- Reduce costs
- Educate providers
  - Pharmacists
  - Prescribers
  - Patients

Supported by NIH
- Pharmacogenomics Research Network
- eMERGE

Drugs:
- Abacavir
- Clopidogrel
- Carbazepine
- Thiopurines
- Codeine
- Tramadol
- Tamoxifen
- Statins
- Clopidogrel
- Warfarin
- Allopurinol
- Fluoxetine
- Paroxetine
- Fluvoxamine
- Citalopram
- Escitalopram
Need for a robust **Infrastructure**

- Biobank & Biorepositories
- Biomedical Ethics
- Medical Genome Facility
- Information Technology
- Biomedical Informatics
- Education
Need for a robust **Infrastructure**

Collecting, processing, storing, distributing and managing biospecimens and data associated with their analysis

**Biobank and Biorepositories**
Mayo Clinic Biobank

- Enrolled 50,000 Mayo patients regardless of health history
- Allows for past and future access to medical record
- Risk factor data and specimens used in multiple studies
- Each study has its own IRB approval
- No “re-consenting” for each study
- Results incorporated back into the Biobank for reuse
- Allows for future contact (up to 2x/year)
- Certificate of Confidentiality
- Data and specimens used in hundreds of Mayo studies
Individualizing Medicine Conference
September 20-23, 2015

- 55 speakers
- 798 attendees
- 13 countries
- 150 organizations
- 6 workshops
- The largest conference of its kind
- Learning from others
- Sharing with others
- Moving the field of individualized medicine forward
Thank You

Visit CIM online at
http://mayoresearch.mayo.edu/center-for-individualized-medicine

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