MeTree™
Family Health History Based
Risk Assessment and Clinical Decision Support Program
Principle Investigators

Lori Orlando, MD MHS  
Lori.orlando@duke.edu

Geoffrey Ginsburg, MD PhD  
Geoffrey.ginsburg@duke.edu

CENTER FOR APPLIED GENOMICS & PRECISION MEDICINE
Department of Medicine, Duke University
MeTree Goals

- Facilitate uptake of evidence-based guidelines for risk management in clinical care
- Enhance the quality of FHH information available for risk stratification
- Encourage learning and shared decision making for patients and providers based on the Health Belief Model and Adult Learning Theory
- Ongoing research to better understand the value of FHH and inform/refine clinical guidelines

*Developed and optimized through grant funding
Barriers by Stakeholder

**Patient**
- Education
- Accuracy

**Provider**
- Time
- Awareness
- Complexity

**Health System**
- Inadequate systems for collecting data & providing actionable information
- Awareness of value for their population
Ideal Flow of FHH Information

Patient at Home

Data sent to medical record, processed and report generated

Appointment

Patient-Physician

New recommendations
New research
Algorithm updated

Disease risk
Patient values
Physician recommendation

Healthcare Plan

Patient

Physician

Recommendation

Disease risk

Rx
MeTree: Patient-facing risk assessment and clinical decision support program

**For the Patient:**
- Educates patients on what information to collect and how
- Can update anytime
- Real-time tailored feedback on risks, what to talk to provider about, and pros/cons
- English and Spanish versions

**For the Provider:**
- Saves provider time (no data collection)
- Creates pedigree for 98 medical conditions
- Automated risk assessment for 30 conditions
- Risk calculators for CAD and Colon/Breast cancer
- Provides action-oriented clinical decision support tied to just in time education

**For the Health System:**
- Improves data quality
- Delivers evidence-based recommendations and resource utilization triggers
- Directs resources to the right patient at the right time
Technology

- Tablet/Touch screen functions (drag/drop/swipe..)
- American Health Information Community standards for high-quality FHH
- Data storage standards
  - HL7
  - SNOMED
  - ICD9
- SMART on FHIR®© for plug and play compatibility with EHRs
Clinical Trials

- Cone Health study
  - Assess value for clinical care
  - 5 pilot clinical decision support conditions
  - 2 Intervention and 1 control primary care clinics
  - 1184 adult patients with upcoming appointments with their providers
  - Wide spectrum of data collection: acceptability, accuracy, clinical impact

- Implementing Genomics in Practice (IGNITE) network
  - Current version of MeTree
  - Clinical utility and parameters critical to implementation success across diverse healthcare settings
  - 5 national (very diverse) healthcare settings’ primary care clinics
  - Adult patients with upcoming appointments with their providers
  - Mixed methods assessing: acceptability, accuracy, clinical impact
Cone Health Results

- Broadly positive physician and patient user experiences (Wu et al. *BMC Fam Pract.* 2013 6;14:111.)


