

metree



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

Principle investigators

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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*



Health System

- *Inadequate systems for collecting data & providing actionable information*
- *Awareness of value for their population*

Provider

- *Time*
- *Awareness*
- *Complexity*



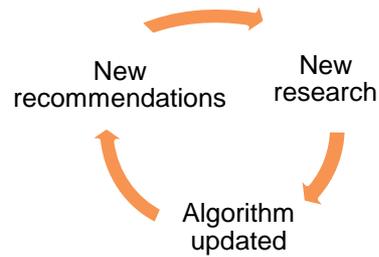
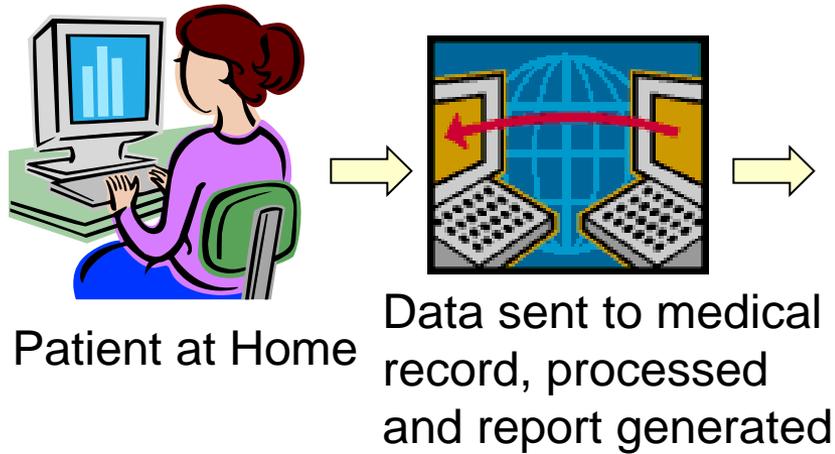
The Logistic Function

$$\text{Log} \left[\frac{Y}{(1-Y)} \right] = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + \dots + b_n X_n$$

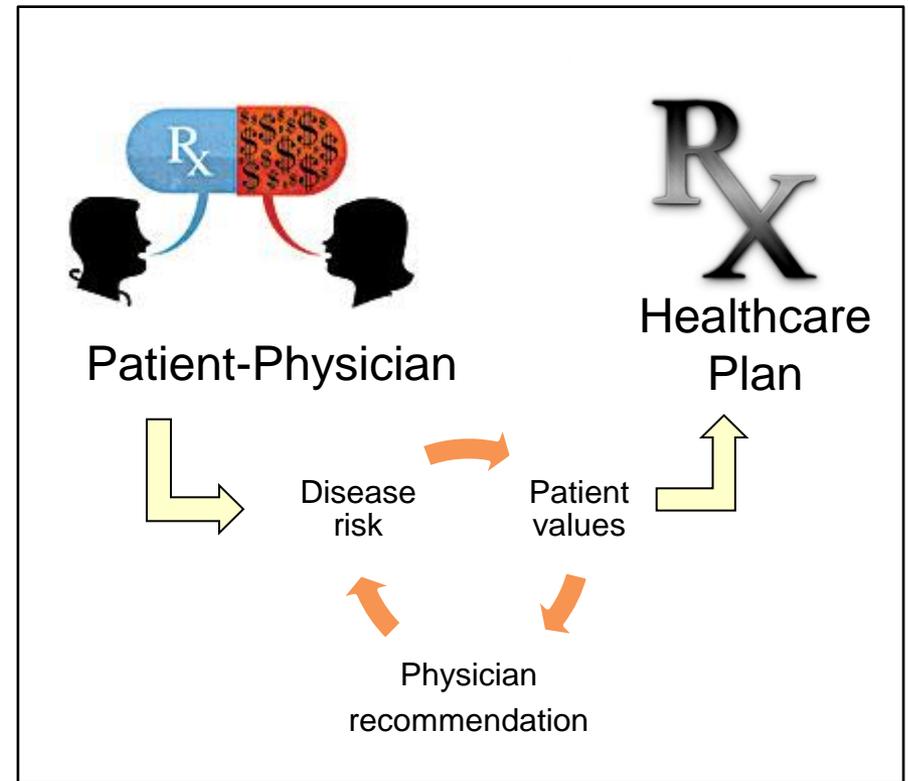
Log(Likelihood) diet score (0-15) age group (0/1) sex (0/1)



Ideal Flow of FHH Information



Appointment



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 Health System:

- Improves data quality
- Delivers evidence-based recommendations and resource utilization triggers
- Directs resources to the right patient at the right time

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

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.)
- **Enables improved FHH collection – amount and quality of data** (Wu et al. *BMC Fam Pract.* 2014 13;15:31 and Beadles C, et al. *Familial Cancer* 2014 13, 325-332.)
- **Helps physicians identify patients at increased disease risk** (Orlando et al. *Am J Med Genet.* 2014 166C(1):24-33.)
- **Helps physicians direct resources to the right patients – reduces overutilization and prompts guideline-driven risk management** (Orlando et al. *GIM.* 2016. Doi:10.1038/gim.2015.210. PMID: 26938783)
- **Improves patient uptake of physician risk management recommendations** (Orlando et al. *GIM.* 2016. Doi:10.1038/gim.2015.210. PMID: 26938783)