Report from
Unifying the Evaluation and Implementation of Genomic Medicine
AKA
The Payer Engagement Workshop

Toni I. Pollin, MS, PhD, CGC
Daniel Mullins, PhD
Attendance: Unifying the Evaluation and Implementation of Genomic Medicine

- August 18th, 2016 @ 8:30 AM – 5:30 PM in Bethesda, MD
  - 66 people at one large table and 36 remote attendees
    - NHGRI program staff and network (IGNITE, CSER, NSIGHT, eMERGE, UDN) members
    - Patients
    - Care and technology providers
    - Researchers
    - Payers
  - Payer Panel
    - Suzanne Belinson, PhD (BlueCross BlueShield [BCBS])
    - Joshua Plavin, MD (BCBS Vermont)
    - Cheryl Reid, MD (Aetna)
    - Kenneth Schaecher, MD (SelectHealth)
    - Heather Shappell, MS, CGC (Beacon Laboratory Benefit Solutions)
    - Deborah Smith, MD, MPH (BCBS Federal Employee Program)
• Brief introduction to the value of IGNITE and Genomic Medicine by Eric Green

• Objectives presented by Toni Pollin and Daniel Mullins
  – To begin to build a process for communication among patients, providers, insurers, and researchers for a team-oriented approach to evaluating and implementing genomic medicine
  – To understand what evidence is needed and how it should be disseminated for all
  – To identify protocols that will help to provide evidence needed to make the application of genomic medicine sustainable
John Brumsted, MD: CEO, UVM Medical Center and President/CEO, UVM Health Network

- Investment in genomics as powerful tool to improve patient care and control cost that can be linked to quality parameters
- Vermont is considering statewide whole genome sequencing to assist in developing lifelong care plan for all patients

Joshua Plavin, MD, MPH: Medical Director, BCBS Vermont

- December 2015 CPT code 81445 (5 – 50 targeted genomic sequence analysis pane for solid organ tumors) was created and reimbursement approved
Case Study 1: Targeted Genotyping

*CYP2C19* Genotype and Post-Stent MI

Discussion Points: Targeted Genotyping

- Pre-emptive vs. reactive PGx testing
  - Challenges in keeping genomic information in EHR
  - Clinical utility data needed
  - Genotype vs. phenotype testing
  - What constitutes medical necessity
  - How to define who and when a patient gets tested

- Clinical utility vs. clinical validity

- Communication of results
  - Variants not related to prescribed medication
  - How to develop and discuss gene-related treatment plans
  - Transferring information between systems/ payers
Case Study 2: Targeted sequencing panel based genetic testing
Diagnosing highly penetrant genetic forms of diabetes

Patient completes questionnaire

- Diagnosed before 1 year?
- Diagnosed before 30 years?
- Age of diagnosis ____
- Hearing or visual impairment/birth defects/ kidney disease?
- Extremely overweight at diagnosis?
- Type 1 diabetes?
- Parent or child with type 1 diabetes?
- 2 or more people related by blood with diabetes?

If indicated...

- Sequence 40 monogenic diabetes genes for mutations

Further workup as indicated

- C-peptide Positive?
- IA-2 Antibody negative?
- Consistent family/ medical history elicited by genetic counselor

If indicated...

- Sequence 40 monogenic diabetes genes for mutations

If pathogenic/likely pathogenic variant found:

- Confirm, disclose and add to electronic health record and customize treatment
- Make genetic counseling and testing available to family members

If variant of unknown Significance found:

- Segregation in family
- Functional studies
Aiming to correctly diagnose rare diabetes
UM researchers study form of disease caused by genetic mutation

House leaders hope to aid city
Plan would provide jobs, education in wake of April unrest

It just didn't make any sense
Sophia Baratta, who was told she had pre-diabetes despite following a strict regimen of diet and exercise

Sophia Baratta, who has a form of monogenic diabetes, works out during a kickboxing class at the Cody 69 Mixed Martial Arts gym in Chicago where she trains.
• Clinical utility and value: how defined and evaluated
  – Costs vary between institutions; may be better to measure resource utilization than costs
  – RCTs have limitations in scope and patient compliance
  – Information available to payers for making decisions may be limited/unclear
  – Difficult to make informed decision without molecular technology background
  – Coding issues (e.g., non-specific/ambiguous CPT codes) being addressed
  – How to use existing outcomes and knowledge to inform future decisions
  – Economic data add weight but do not solely drive medical policy decision-making
Case Study 3: Genome-wide methods
Shifting paradigms

Genome → Epigenome

 YOU → Environment

Medical Phenotype

Healthcare Provider (EHR) + Patient

Debra Leonard
Normal

Pyrin → Chemotactic-factor inactivator → C5a → Degradation of C5a

Subclinical damage

Mutation in the Familial Mediterranean Fever Gene

Pyrin × → Chemotactic-factor inactivator

C5a → C5a → C5a → C5a

Explosive inflammatory reaction
Discussion Points:
Genome-wide Methods

- Genome/exome sequencing as a first vs. last resort
- Need to have a time element linked to clinical utility
- How many sequences do you have to do to get a significant clinical aberration that needs attention?
- 3% of healthy Geisinger MyCode patients had clinically significant variants in the Geisinger 76 (ACMG 56 + 20)
- Cost of genome sequencing chemistry does not capture costs associated with interpretation and therapy changes
- Mechanism for maintenance in EHR payment for and re-interpretation of genome sequence: variant, gene and phenotype level
- Future ideal is that genome sequencing could be done once to inform future care; current reality is that technology is evolving and coverage is not perfect and sequencing will likely have to be repeated
Lunch Roundtable Report-Out 1: Building a Coalition

• Need to clarify what the coalition is trying to accomplish
• What existing organizations can be built upon?
• Who are the stakeholders?
• Payers don't have the resources to drive the coalition but need to be active participants
Need more evidence on downstream costs
Looking to guideline-setting organizations
Peer-reviewed publications are critical
Large payers gather/analyze own evidence to make decisions
In vitro dx manufacturers could support studies to generate evidence
How is "change in care" defined?
• RCT not often possible
• Need to focus on high clinical value conditions or diseases vs. gaining reimbursement
• Challenging to get payers and manufacturers to share the risk
• Use modeling before starting study
• Work closely with payers up front
• Economic analysis not the most critical factor in study design but should be considered
• Look at dx not as an end but how affects patient care
Need for a central database
Letters of medical necessity clearinghouse
Payers make decisions based on guidelines, publications and national meetings
Medicaid takes input from patients and advocacy groups
Regular newsletter with updates on genomic evidence advances would be of value—more than quarterly
A standardized process for providing genomic clinical utility information is needed

Coverage considerations should include communication of genetic results

Coverage and EHR models should promote utilization of existing genomic information including whole genome sequence as an ongoing resource
Next Steps in Payer Engagement Process
To Work on in the Next 6 Months

• Proceedings to be published at ignite-genomics.org

• Manuscript will be submitted to a peer-reviewed journal

• Strategic plan for
  – Ongoing efforts to engage stakeholders and address challenges
  – Obtaining resources to support these efforts