PCCI Connect: Bridge Building and Fostering Human Centered Care

- Shelley Chang, Parkland Center for Clinical Innovation
- Stephanie Fenniri, Parkland Center for Clinical Innovation
PCCICOnnect: Bridge Building and Fostering Human Centered Care

4.16.18

Stephanie Fenniri, MPA
Shelley Chang, MD, PhD
CREATING A WORLD OF CONNECTED COMMUNITIES WHERE EVERY HEALTH OUTCOME IS POSITIVE

MISSION: Reimagine and expand the knowledge base of healthcare through prescriptive analytics and artificial intelligence to deliver precision medicine.

Leading clinical expertise applying practical insights across the continuum of care

Prescriptive analytics and artificial intelligence driving personalized and precision medicine

Clinical Insights

Data Science Expertise

Innovation Framework

Innovation process and discipline, building breakthroughs and leading change
PCCI’s VALUES

**PROGRESS**
We value progress over perfection. Our work is both innovative and practical.

**COLLABORATION**
We collaborate with our team, our partners and the community enabling us to go further, faster. There is power in diversity and numbers.

**CARING**
We have a servant approach and mindframe. Caring about each other, our partners and those we serve in the community is what motivates us every single day.

**INITIATIVE**
We go beyond what is asked of us. Expectations are starting points.

**SCIENCE**
We balance Innovation with science. Our work is grounded in scientific principles and rigor.

**VISION**
"We can do it if..." vs "We can't do it because...". We see healthcare, not as it is, but as it can become.
Strategic Areas of Focus

Our Work

We're more than thinkers. We garner results.

- Connected Communities of Care
- Hospital Reimagined
- Patient Engagement
- Research
- Innovation Portal
**Dallas IEP**

Dallas IEP is a program focused on addressing the health and social needs of a community. The program connects healthcare providers and CBOs to coordinate the communication and care for individuals.

- Cutting edge cloud-based technology that enables bi-directional communication, referrals, and service tracking
- Comprehensive information exchange Playbook covering:
  - Legal, policy, and governance documents
  - Clinical and community workflows
- Continually updated inventory of clinicians and community service providers
- Innovation network for learning, research, co-creation, and rapid knowledge dissemination
**Technology**

**Goal:** Utilize Iris technology in order to leverage existing resources to promote connectivity.

**Clinical**

**Goal:** Utilize predictive analytics and AI to prevent readmissions, save lives and reduce healthcare costs.

**Sustainability**

**Goal:** Empower donors and stakeholders to provide better healthcare to the individuals in their communities. Strive to improve healthcare trends across the national continuum.

**Community**

**Goal:** Understand social determinants of health's impact on quality of life and how connected communities build a support system for a path to self-sufficiency.
How We Started: Readiness Assessment

1. Identify target clinical conditions
2. Identify social needs that impact clinical conditions
3. Describe population to be served by Dallas IEP conditions
4. Describe the organizations and users of Dallas IEP
5. Develop use cases for Dallas IEP
6. Review similar initiatives
PCCI ECOSYSTEM

Non-profit, Innovation, Early Stage Advanced Analytics R&D Organization

One of the largest and most technologically advanced public health systems in the world serving a very diverse and vulnerable population.

DRIVING INNOVATION

For-profit, Technology and Advanced Analytics Company

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Pieces Iris™

- Configurable intake forms
- Cloud-based: accessible anywhere you get the internet
- HIPAA compliant
- 2-factor security
- Always on customer support
- Multiple user roles keeps sensitive information in the right hands
- Custom quick reports
Community Adoption

- Over 100 organizations in DFW
- Includes two major umbrella organizations with national reach: North Texas Food Bank & Metro Dallas Housing Alliance
- Mental Health
- Criminal Justice Reintegration Services

345K encounters; 215K enrollments; 7200 referrals
PCCI Advanced Analytics

1. Data Hosting and Extraction
   - Standardizing data collection entry interface, storage, and extraction

2. Descriptive Analytics
   - Automated Recurrent Operational Reports for Volume, Characteristics, and Associations in Clients, Needs, and Services Delivered

3. Predictive Analytics
   - Which clients, geographic locations, or target groups are at high risk or high need

4. Prescriptive Decision Making
   - Which actions should be taken on target groups to maximize impact of overall existing resource on client outcomes

5. Workflow Integration
   - Building interface to integrate decision making tools into existing workflow
Meet the PCCI DASH Team

Yolande Pengetnze
MD, MS, FAAP
Medical Director
Principal Investigator

Stephanie Fenniri, MPA
Senior Community Partnerships Manager

Tammy M. Pastor, LMSW
Case Manager

Bin Xie, PhD
Director, Health Services Research

Shelley Chang, MD, PhD
Physician Scientist

Anthony Waddimba, MD, D.Sc
Senior Health Services Researcher

*Additional assistance provided by Stephanie Mokashi, UT Southwestern Medical Student

4.16.18
Data Across Sectors for Health: Food for Health
Video
Background
Background

1. Food insecurity is associated with higher prevalence and poorer outcomes of chronic conditions

2. Food insecure patients diagnosed with diabetes or hypertension are more likely to have poor disease control

3. Diet is a key component of diabetes or hypertension care, and proper diet is associated with improved disease control

4. Lack of care coordination between healthcare systems and social services providers might interfere with optimal care for food insecure individuals

5. Closing silos between healthcare systems and community services providers represent an opportunity for improvement in community care and health outcomes
DASH Program Aims

→ To test the feasibility of data sharing and cross-organizational care coordination between a safety net healthcare system and community services providers using a Social-to-Health Dallas IEP

→ To measure the collective impact on the health and care experience of food-insecure individuals with diabetes and/or hypertension
DASH: Food for Health

DASH Grantee Announcement
DASH: Food for Health selected as one of 10 national awardees from 409 national applicants

Feb 2016

Recruitment Begins

Jan 2016

Recruitment Saturation

Jan 2017

Conclusion of DASH: Food for Health
151 NTFB clients were recruited of which 141 were monitored for at least 1 month

Dec 2017

Commencement of DASH: Food for Health
Launch of DASH Project Team meetings and the DASH Community Advisory Board

Sept 2016

Recruitment Ramp Up Period

Summer 2017

Analysis of DASH: Food for Health
92% of NTFB clients Agree or Strongly Agree that as a result of the program, they make healthier food choices

Nov 2017
Partners
The Dallas IEP Technology: Pieces Iris™

- Web-based, HIPAA-compliant case management platform for community services providers
Established in 1982 to address hunger by distributing donations of surplus food and grocery products — otherwise destined for landfills through a network of charitable organizations across 13 counties.

One of top five food banks in the 200-member Feeding America Network.

Provides 70 million nutritious meals annually, and has distributed more than 730 million pounds of food since its founding.

However, the actual need in community is closer to 92 million meals. Stop Hunger Build Hope Campaign is raising funds for a 10-year plan to close the meal gap in North Texas by 2025,
Methodology
Concept Model

Intervention
- Appointment Reminders
- Medication Reminders
- Diet, Physical Activity, Nutrition Information
- Social & Resource Referrals

Intermediary Outcomes
- Increased Outpatient Disease Management, Care Adherence
- Improved Accountability, Self-Care, Adherence to Medication, Diet, Physical Activity Goals
- Improved Social Capital and Resource Utilization to Support Self-Care

Downstream Outcomes
- Reduce Acute Care Utilization
- Improved Disease Outcomes

Patient Engagement & Empowerment
Workflow Creation

Key Elements & Associated Challenges

- **Collaborative Design**: Involve frontline staff and volunteers at the onset of program design
- **Adaptable Workflows**: Responsive to technology readiness, specific organizational needs and change in processes
- **Quasi-binding**: Once defined for an organization, workflows are implemented into daily operations
- **Training**: Staff and volunteers received community workflow, data and Protected Health Information, and technology training
- **Quality Assurance**: Continuous supervision by an LMSW
Cross-Sectoral Workflow Design

Data Collection

CBO Intervention
- Client visits SLCO, reports HTN or diabetes AND Parkland care
- Client consents to DASH program enrollment

Clinical Intervention
- Identifiers used to retrieve data from EPIC & transfer into Pieces Iris™ (active meds, appts, validate HTN/DM diagnosis)

Data Reporting

Next visit at SLCO DASH interventions:
- Appts & Rx fill reminders
- Healthy food selections
- Identify barriers to care

SLCO Staff/volunteers
- Document intervention in Pieces Iris™
- Provide PHHS with feedback in Pieces Iris™

Patient fills Rx, goes to appts, eats healthy food, and BP/DM is controlled

Client flagged as DASH client in Pieces Iris™

PHHS staff sees feedback in Pieces Iris™, reaches out to patient to address barriers to care (e.g. Rx fill assistance)
**Program Evaluation Methodology**

**Program**
- Program Dates: Feb 2016 - Nov 2017
- Interventions: Oct 2016 – Nov 2017

**Mixed Methods**
- Qualitative/Operational
- Quantitative: Care Utilization/Disease Management. Contemporaneous Propensity-Score Matched Controls, i.e. diagnosis/disease severity, %FPL, demographics, social determinants, baseline utilization

**Data Sources**
- Parkland electronic health records system
- Pieces Iris™ database
- Participants and provider surveys and focus groups
Mixed-Methods Outcomes Measured

Operational Feasibility (Immediate):
- Successful Establishment of Operational Workflow, Health and Social Information Exchange, Participant Recruitment, Intervention Delivery
- Participant and Provider Satisfaction: Qualitative Satisfaction Survey and Focus Groups

Outpatient Care Utilization and Management (Intermediary):
- Improved Outpatient visit attendance and adherence

Health Outcome (Long-Term; Requires Scale-up and Extended Interventions):
- Reduce rate of “all-cause” emergency department (ED) visits – i.e., ED visits with any diagnosis
Key Findings / Lessons Learned
Lessons Learned - Part 1

- Strong value proposition to stakeholders
  a. Community alignment and support around IEP and electronic platform

- Stage of change readiness
  a. Identify and Begin with Early adopters

- HIPAA-Compliant, Adaptable, and Multifunctional Electronic Platform
  a. Responsive to needs of Dallas IEP participants

- Engage all stakeholders at all steps in an iterative process - frontline personnel +++
  a. Actionable and adaptable workflows for recruitment, interventions & data flow
  b. Legal framework / Governance +/- Technology build
Lessons Learned - Part 2

- Adaptable Evidence-Based Interventions
  - Nutrition education materials adapted to food pantry inventory

- Adaptable and Practical Trans-Sectoral Workflows
  - Flexibility to accommodate partners, practicality based on frontline input

- Leverage existing trusted relationships
  - Client trust of community services providers vs. healthcare providers

- Train, Train, Retrain... + Incorporate Feedback
  - Privacy + Processes Training
- NTFB Participant Characteristics:
  a. 67% African-American, 24% Latino
  b. 79% Female
  c. 59% both diabetic and hypertensive

- 151 NTFB participants enrolled / 141 monitored for at least one (1) month post-enrollment
Interventions by Food Pantry

Average Number of Interventions Per Client by Food Pantry

- Sharing Life: 2.2
- Our Community Pantry: 3.2
- Crossroads Community Services: 1
- North Texas Food Bank: 2.5
DASH: Food for Health Participant Satisfaction
Participants Satisfaction Survey

- Agree or Strongly Agree that as a result of the program, they make healthier food choices: 92%
- Agree or Strongly Agree that they would recommend the program to friends and family: 93%
- Agree or Strongly Agree that the program has made them more able to manage their disease: 90%
- Agree or Strongly Agree that the program has made them more likely to go to their doctor’s visit: 93%
# Participant Focus Groups

<table>
<thead>
<tr>
<th>Domain</th>
<th>Positive Themes</th>
<th>Negative Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Sharing</td>
<td>Comfortable sharing health data only if benefits to health</td>
<td>Would not share Social Security Number</td>
</tr>
<tr>
<td>Nutrition Interventions</td>
<td>Awareness / reminders / assistance with healthy food selections</td>
<td>Would prefer flip charts vs. handouts</td>
</tr>
<tr>
<td>Appointment and Medication Reminders</td>
<td>More accountable to self and to food pantry staff</td>
<td></td>
</tr>
<tr>
<td>Overall Feedback on DASH Program</td>
<td>- Very helpful</td>
<td>- Slower services at PA</td>
</tr>
<tr>
<td></td>
<td>- Enhanced interactions with food pantry staff</td>
<td>- Need linkage with other social services</td>
</tr>
</tbody>
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Staff / Volunteer Engagement
Food Pantry Survey & Focus Group Results

Positive Themes
- Comfortable performing interventions
- Clients were receptive to interventions

Negative Themes
- Privacy / Confidentiality concerns
- Technical difficulties

Positive Themes
- 96% would recommend program expansion to all food pantry clients
- 96% would participate in similar program in the future

Negative Themes
- Time consuming interventions
- Volunteer turnover
Impact on Health Services Utilization

1. No-show or same-day cancellation prevented for every 20 outpatient clinic appointments made*.

2.56 more completed outpatient clinic visits per participant per year**.

* Near significant trend (p=0.0685) detected, comparing between period changes in no-show/same-day cancel rate for DASH participants versus controls.

** Significant increase (p=0.0272) detected, comparing between period changes in visits completed for DASH participants versus controls.

Emergency acute care utilization averted***

*** Long-term outcomes require scaled-up and extended interventions beyond scope of present feasibility study.

- Improve Disease Outcomes
- Reduce Acute Care Utilization

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Next Steps
Next Steps*

- Continued Monitoring
- Additional Recruitment
- Enhanced technology and analysis
- Scalability to other Food Pantries

*Pending additional funding
Questions?

For more information, please contact Stephanie Fenniri at stephanie.fenniri@pccinnovation.org and Dr. Shelley Chang at shelley.chang@pccinnovation.org