GEISINGER: An integrated health system

We care for patients
- 11 hospital campuses
- 253 clinic sites
- 3,000 providers

We provide quality, affordable healthcare coverage
- 578,000 members
- 55,000 contracted providers/facilities

We teach, research and innovate
- 523 MBS/MD students at GCSOM
- 48 GLH School of Nursing, 2,000+ other nursing students
- 505 residents/fellows
- 1,000+ active research projects
Multiple Factors Impact Health

Health Outcomes:
• Socioeconomic Factors: 40%
  • Education
  • Job status
  • Family/social support
  • Income
  • Community safety
• Health behaviors: 30%
  • Tobacco use
  • Diet and exercise
  • Alcohol use
  • Sexual activity
• Health Care and Access: 20%
• Physical environment/Genetics 10%
Where did we start?

- Community Health Needs Assessment: data used to determine pilot location
- Heavy burden of food insecurity and diabetes in Northumberland County, Pa

Data Sources: Food Insecurity – Feeding America, 2015
Diabetes: CDC Diabetes Atlas & BRFSS, 2009-2013
Food Insecurity: Statistics

• In 2015 it was estimated that:
  • 13% (almost 1 in 8) of Americans were food insecure*
  • 18% (1 in 6) of American children were food insecure^

• Food insecurity and poverty, while closely linked, are not synonymous.
  • Each family has its own expenses and standard of living, and different costs.
  • It is possible to earn below poverty levels and be food secure or earn above poverty level and be food insecure.^^

^https://www.childtrends.org/indicators/food-insecurity/
^^http://www.medscape.com/viewarticle/865606#vp_2
Compared to the food secure, people who are food insecure are...

• More likely to be:
  o In households with children (who may also go hungry)

• And had:
  o Poorer self-rated health
  o Limited health care access
  o More frequent poor physical and mental health days
  o Higher BMI
  o Higher prevalence of diabetes, smoking, depressive symptoms, and every type of functional limitation

https://www.cdc.gov/pcd/issues/2016/16_0103.htm
A vicious bidirectional relationship: Which came first?

- Food insecurity can worsen a person’s chronic conditions ie) diabetes and vice versa
  - Lower dietary quality
    - Lack of funds or access to nutritious foods
    - High availability of nutritiously poor foods
  - Increased spending on medical care (“treat or eat”)
  - Decreased capability for self-care
- Reduced capacity to work
- Higher stress and obesity
- Poorer mental health
- Lack of opportunities to be physically active
- Limited access to healthcare
- Lack of transportation
- More emergency room visits

https://www.diabetesselfmanagement.com/blog/are-you-food-insecure/
Diabetes & Food Insecurity – A national call for help

Population Health Impacts

<table>
<thead>
<tr>
<th>Year</th>
<th>Ratio</th>
<th>T2DM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>1 in 10</td>
<td>Adults</td>
</tr>
<tr>
<td>2050</td>
<td>1 in 3</td>
<td>Adults</td>
</tr>
</tbody>
</table>

HBA1c of 6.5-9
1 in 5 are food insecure

HBA1c >9
1 in 4 are food insecure

Financial Impacts

- Diabetes has highest healthcare spend
- $327 billion/year
- Diagnosed diabetes cost to America
- 2.3 times greater
- Cost of healthcare with diabetes compared to without diabetes

How do we solve the problem?

1 Diabetes Statistics Report, 2014
3 ADA Website
Program premise:
What if we could eliminate hunger and prevent chronic disease?
### “Food as medicine”
- Lifestyle changes: Cornerstone of treatment
  - Weight management, nutrition, physical activity and tobacco cessation
- Screen for complications and close care gaps
- Vaccinate and reduce cardiac risk factors

### Identification and outcomes
- Identify through medical record clinical criteria and screening questions (18 yrs old, Dx Type II, HBA1c 8.0% or higher, Food insecure)
- Physician referral
- Tracking clinical outcomes and closure of care gaps

### Disease-specific education/care management
- Care management via telephone or in-person visits with registered dieticians, registered nurses, pharmacists or community health assistants
- In-person group classes including evidence-based programs and other lifestyle programs
- Meal planning with registered dieticians (recipes and menus provided in person)

### Food distribution
- 10 meals per week, every week for participants and their families at Fresh Food Farmacy locations
Fresh Food Farmacy to address Food Insecurity and Type II Diabetes

- Within the past 12 months, we worried whether our food would run out before we got money to buy more (Y/N).

- Within the past 12 months, the food bought just didn’t last and we didn’t have money to get more (Y/N).

- Defined as “…the inability to afford nutritionally adequate and safe foods.”

- Food insecurity is evident when families or individuals:
  - Lack access to food
  - Depend on food assistance programs
  - Skip meals
  - Substitute nutritious foods with less expensive alternatives
  - Seek assistance from soup kitchens and food pantries

How do we do it

A new model with 5 basic elements.

1. Identification
2. Food as medicine
3. Education/Clinical support
4. Care beyond health
5. Community partnerships
How we do it.

1. Identification

- Medical record clinical criteria and screening questions
  - 18 years old
  - Dx Type II
  - HbA1c 8.0 or higher
  - Food insecure
    - With the past 12 month, we worried whether our food would run out before got money to buy more (Y/N)
    - Within the past 12 months, the food bought just didn’t last and we didn’t have money to get more (Y/N)

- Physician or care team member referral
- Collect baseline outcomes and closure of care gaps
How we do it.

2. Food as medicine

• Stock only fruit and vegetables, lean meats, whole grains, proteins and healthy options
• Provide enough food to create healthy meals for five days a week, two meals a day. (10 meals a week, every week)
• Provide food for the entire household
How we do it.

3. Education

• Care team providing in person and/or telephonic support
  • Screen for complications and close care gaps
  • Lifestyle changes: Cornerstone of treatment
• In person evidence based programming
• Meal planning and recipes
• Additional supplemental lifestyle management programs including tobacco cessation, physical activity programs, grocery tours, food demonstrations, etc.
How we do it.

4. Care beyond health

- Access to transportation, housing and food stamp programs
How we do it.

5. Community partners

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pounds of Food</strong></td>
<td>87,231</td>
<td>191,266</td>
<td>278,497</td>
</tr>
<tr>
<td><strong>Meals Provided</strong></td>
<td>72,693</td>
<td>159,388</td>
<td>232,081</td>
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</table>
**Clinical measures**

- Hemoglobin A1c measures improved: -- Average 2.0 Improved A1c for FFF patients
- Glucose measures improved: -31.3% in 51 patients
- Cholesterol lowered: -15.8% in 80 patients
- LDL lowered: -17.0% in 94 patients
- Triglycerides lowered: -24.3% in 76 patients

**Compliance against care plan**

- Improved compliance rates of adult prevention and diabetes quality measures:
  - Annual eye exams increased 16%
  - Annual food exams increased 23.96%
  - Mammograms increased 7.16%
Food as medicine is having a real impact.
The Current Patient Experience - Meet Rita

Enrolled in Fresh Food Farmacy

Worked with Case Manager on diet & exercise management

Began regularly checking sugars, watching diet, & walking for exercise

Rita

Age 55
Condition(s) Diabetes

About Rita
- Married
- Raising her 3 grandchildren
- Has been underinsured and uninsured over the last few years

13.8 A1C
181 lbs.
209 LDL
312 Triglycerides

6.9 A1C
165 lbs.

5.4 A1C
135 lbs.
47 LDL
76 Triglycerides
The Current Patient Experience – Meet Tom

Enrolled in Fresh Food Farmacy

Worked with Case Manager on diet, exercise, & proper diabetes management

Began regularly checking sugars, watching diet, & walking for exercise. Began teaching classes for the program.

Age 57
Condition(s) Diabetes

About Tom:
• Single
• Lives alone
• Multiple ED visits / admissions related to poor diabetes care
• Doesn’t know how to cook
• Reported feeling alone & depressed

9.1 A1C
450 lbs.
355 Triglycerides

6.6 A1C
425 lbs.
152 Triglycerides
Total cost PMPM for FFF member before/after enrollment
Where are we now?

- Current programming in Northumberland County to include Family Medicine, GIM, Women’s Health, and Specialty Endocrine Care

- Future programming to include Scranton- Lackawanna County followed by Lewistown, Mifflin, and Juniata Counties

- Ongoing clinical and financial impact analysis
Questions?

Thank you!

Questions?