Produce Prescription Program (Produce Rx Program):

“[A] medical treatment or preventative service for patients who are eligible due to a diet-related health risk or condition, food insecurity or other documented challenges in access to nutritious foods, and are referred by a healthcare provider or health insurance plan. These prescriptions are fulfilled through food retail and enable patients to access healthy produce with no added fats, sugars, or salt, at low or no cost to the patient.”

(National Produce Prescription Collaborative, March 2021)
DEFINING PRODUCE PRESCRIPTIONS

- Medically Tailored Meals
- Medically Tailored Food Packages
- Produce Prescriptions
- Emergency Food & Anti-Hunger Social Service Programs (SNAP, school food programs, etc.)
Poverty should never be an obstacle to healthy food choice.
We’re Know There is a Food & Health Crisis

• 1 in 3 Americans is obese

• 66 million Americans are food insecure

• Diet has surpassed smoking as the leading cause of death and disease.

• Diet-related disease costs America $1.4 trillion annually
Fruits and Vegetables as Medicine

FVRx Begins

- Participating health clinics & hospitals enroll participants for 6-9 month period.
- Doctors identify patients either with, or at risk of diet-related disease.
- Doctors prescribe produce.
- Patient works with nutritionist to set healthy weight goals
- Patients receive $1/day/household member for produce at participating retailers.
FVRx’s Reach 2011–2015

- 7,000 index patients and family members
- 61% received SNAP
- 15% received WIC
- 82% covered by Medicaid
- 69% increased F&V consumption
- 47% decreased BMI
- 45% increased food security
- 91% happier with the diabetes intervention program

CA, CT, GA, MA, ME, MN, NM, NY, RI, TX, Washington, D.C. and Navajo Nation
Active Produce Prescription Programs: 2020

Programs were included based upon the following inclusion criteria:
Patient eligibility screening, partnership with a healthcare organization, provision of healthy produce (limited to fruits and vegetables with no added fats, sugars, or salts), use of a prescription system, repeated dosage, and retail redemption.

Legend
- Active Produce Prescription Programs as of 2020
- USA State Boundaries

Number of active programs: 94
Thank you!

wholesomewave.org
The Health Care Case for Produce Prescriptions

Steven Chen, MD
Chief Medical Officer
ALL IN Alameda County
steven.chen@acgov.org
Questions:

1. Why is food an essential part of health care?

2. What does the research show us about fruit and vegetable intake and health outcomes?

3. What does the research show us about produce prescription interventions and health outcomes?
1. Why is Food an Essential Part of Health Care?

**Upstream**

Social/Structural Determinants of Health

**Downstream**

Clinical Interventions

Image from: Brain and Life
Food can create health or disease at each stage of life
Moving upstream improves healthcare effectiveness downstream

- **Structural Determinants of Health**:
  - Upstream

- **Social Determinants of Health (SDOH)**
  - Midstream

- **Clinical Condition**
  - Downstream

**Policies and Systems**: food, housing, legal, economics, racism, sexism

- Food insecurity
- Social isolation
- Inadequate housing
- Legal issues
- Safety concerns

**Diagnosis**:
- Diabetes
- Obesity
- Hypertension
- Anxiety
- Depression
Food insecure patients have 2x risk of developing diabetes

Our Food Is Killing Too Many of Us

“Poor diet is the leading cause of mortality in the United States, causing more than half a million deaths per year.”

**Risk factors and related deaths**

**Dietary risks**
- Tobacco use
- High systolic blood pressure
- High body mass index
- High fasting plasma glucose
- High total cholesterol
- Impaired kidney function
- Alcohol and drug use
- Air pollution
- Low physical activity
- Occupational risks
- Low bone mineral density
- Residential radon and lead exposure
- Unsafe sex
- Child and maternal malnutrition
- Sexual abuse and violence
- Unsafe water, sanitation, and handwashing

The US Burden of Disease Collaborators, 2018 (data from 1990 – 2016)
2. What does the research show us about fruit and vegetable intake and health outcomes?
Research and a “Sliding Scale of Evidence”

“The greater the potential of a treatment to cause harm, the stricter the standards it should be held to for efficacy.”

- Andrew Weil, MD
Dosage Matters:
The more fruit and vegetable intake, the fewer deaths

An increase of 1 serving (1/2 cup) of fruit & vegetables per day

• Decreases all cause mortality by 5%\(^1\)
• Saves 30,301 lives across the US per year\(^2\)

2. Union of Concerned Scientists, 2013
Type of Produce Matters: Prioritize “Leafy greens” > “Vegetables” > “Fruit”

Increase fruit intake  x1 serving/day  ↓  1 serving = ½ cup

Increase vegetable intake  x1 serving/day  ↓  Leafy greens > Vegetable > Fruit

Increase leafy green intake  x0.2 servings/day  ↓  1 serving = ½ cup

Reduces risk of

<table>
<thead>
<tr>
<th>Type of Produce</th>
<th>Reduction in Risk</th>
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<tbody>
<tr>
<td>Leafy greens</td>
<td>13%¹</td>
</tr>
<tr>
<td>Vegetable</td>
<td>10%¹</td>
</tr>
<tr>
<td>Fruit</td>
<td>7%¹</td>
</tr>
</tbody>
</table>

1. Li et al, BMJ 2014, metanalysis n = 10 articles including 13 comparisons with 24,013 cases of T2 diabetes and 434,342 participants
2. Hung et al, J Natl Cancer Institute, 2004, n = 71,910 female participants and n= 37,725 male participants tracked over 10 years

Images from: CBS
3. What does the research show us about Produce Prescription interventions?
Health Impact of Produce Prescription Programs

- **Diabetes (HbA1c):** 0.5-3.1% pts reduction¹,²,³,⁴
- **Blood Pressure:** -16 mmHg⁵
- **Obesity (BMI):** -0.4-0.7 kg/m²⁵,⁶
- **Preterm Birth:** 37% reduction⁷
- **Depression:** 47% reduction⁵

2. Feinberg AT et al. 2018. “Prescribing Food as a Specialty Drug.” *NEJM.*
A 30% subsidy would increase mean intake of fruits by 0.4 servings/day and vegetables by 0.4 servings/day.

Prevents 1.93 million cardiovascular (CV) events

Saves $40 billion in healthcare costs

Images from: Freepik
The power of the produce prescription

With great power, comes great responsibility and great questions...

How do we provide clinically relevant nutrition training for healthcare staff?

Where does the produce come from? How was it grown?

How do we center equity to ensure communities of color have access to this produce prescription?

II. **Stakeholder Interviews (June – Aug. 2020):** Conducted 62 interviews to gather insights on common barriers and experiences in the field of Produce Rx.

III. **Feedback Session (Nov. 2020):** Conducted feedback session with both interviewees and non-interviewees to review and refine draft recommendations.

### Stakeholder Interviews

- Produce Rx Programs
- Health Care Payers
- Health Care Providers
- Food Retail Organizations
- Federal Food Assistance Programs
- Food System Advocacy & Research Organizations
- Nutrition Incentive Programs
- Retail Transaction Technology Experts
## RESULTS – 5 CORE CHALLENGES

<table>
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<tr>
<th>Category</th>
<th>Description</th>
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</table>
| **Funding**               | • Lack of sustainable funding as the largest barrier to expanding access  
• Need to expand and improve enrollment in federal food assistance programs to also address broader population health                                                   |
| **Research**              | • Additional research on Program outcomes (e.g., health outcomes and costs) and design would promote integration into health care system                                                                               |
| **Patient Data & Privacy**| • Tensions between: need for data; desire to protect patient privacy; and legal, financial, and administrative burdens associated with navigating state and federal privacy laws                                                  |
| **Infrastructure**        | • Need for: health care providers who understand value of nutrition interventions; accessible food retailers; and support for retailers to access and implement technology advancements                                  |
| **Advancing the Field**   | • Need for programmatic guidance to facilitate the creation and participation in Produce Rx Programs                                                                                                        |
INTEGRATION INTO HEALTH CARE

Rethinking Health System Design

Interventions that address health-related social needs

Locks on the main entrance
- Lack of research
- “Not health care’s job”
- Confusion about services
- "But what about ______?”
- Lack of infrastructure

Medicaid Waivers
Medicaid Managed Care
Medicare Advantage
Sophisticated Health Care orgs.

HEALTH CARE SYSTEM
MAIN ENTRANCE
The success of efforts to mainstream Produce Rx Programs ultimately depend on the actions of stakeholders on the ground.

**Key Next Steps Will Include:**

- **Building a Coalition for Action:** State and national coalitions are emerging to advance Produce Rx Programs. These coalitions can expand their impact through collaboration and collective action.

- **Identifying Opportunities and Vehicles for Change:** As a result of the 2020 election cycle, the Administration and Congress are newly politically aligned, creating potential for significant action. Stakeholders can start to identify opportunities for change (e.g., health care reform, the Child Nutrition Act Reauthorization, the farm bill).

- **Continuing to Explore Gaps in Knowledge:** Research will play an important role in driving change. There is continued need for research to improve our understanding of Program impact and design, as well as to explore policy areas not addressed in the report.
Access the Full Report and Executive Summary


Executive Summary available at: https://bit.ly/ProduceRxSummary