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# **Outer Cape Health Services:** Community-Based Care Immersion, Analysis, and Enhancement for Rural Populations Facing Multiple Health Challenges

Patrick Joslin, Kevin Makhoul, Aisling Ryan, Haley Schachter  
Mentors: Andy Lowe and Leo Blandford

Population Health Clerkship  
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# Outer Cape Health Services (OCHS) Overview



## Mission

*Provide a full range of healthcare and supportive social services that promote the health and well-being of all who live in or visit the ten outermost towns of Cape Cod.*

## Overview

- Federally Supported Health Center
- 501(c)(3) non-profit organization
- Provides care for patients in the Outer Cape
- Serves more than nearly 17,000 patients per year
- No one is denied access to services due to an inability to pay
- Home to the **Navigator Program**

# Navigator Program Overview



HEALTH SERVICES

## Mission

*To improve the quality of care and increase access to community services for vulnerable populations by acting as a temporary support system that helps clients overcome large barriers, address social determinants of health challenges/disparities, and equip them with skills to manage life on their own*

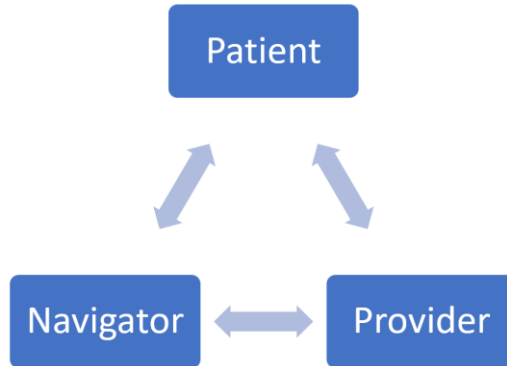
**What is it?** A community-based resource serving the Lower and Outer Cape Cod, MA

**Community Health Workers**, referred to as Navigators, are used in the Navigator program as one key intervention. They are members of the health care team with a multifaceted role in patient screening, support, outreach organization, and education

# Navigator Program: Interprofessional Teams

**Navigators are licensed social workers or have had experience in social work prior to working in the program.**

- Providers flag in-need patients to Navigators and vice versa.
- Providers and Navigators remain in constant communication throughout the patient's enrollment



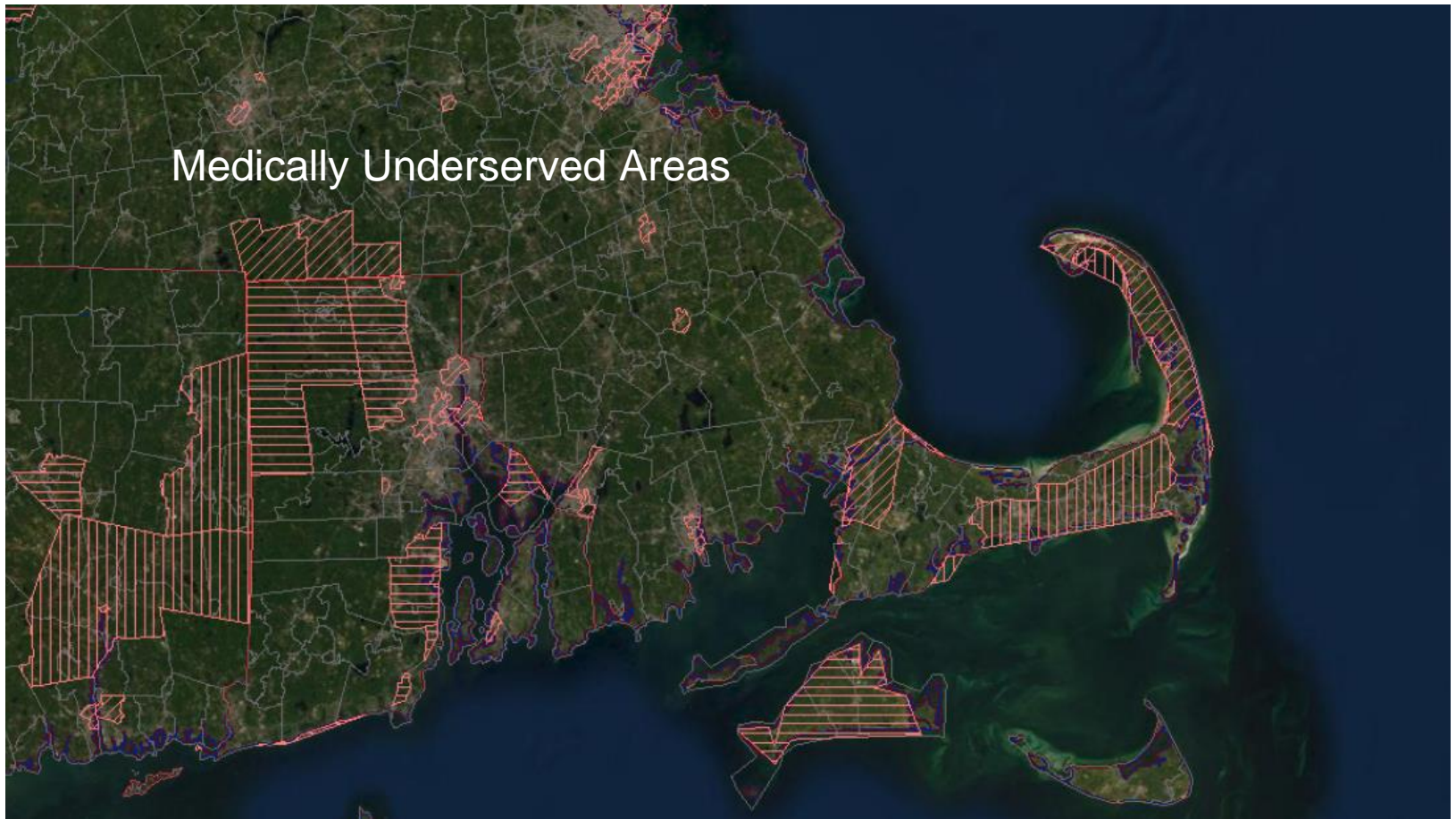
# Who does the OCHS Navigator Program serve?

## Demographic Overview of the Navigator Program Regions

- ❖ Population ~84,000
- ❖ Median Age: 53.5
- ❖ Diversity
  - Race
    - 89.7% White
    - 3% Black or African American
  - Ethnicity
    - 2.65% Hispanic or LatinX
- ❖ Median Household Income: \$65,140



## Medically Underserved Areas

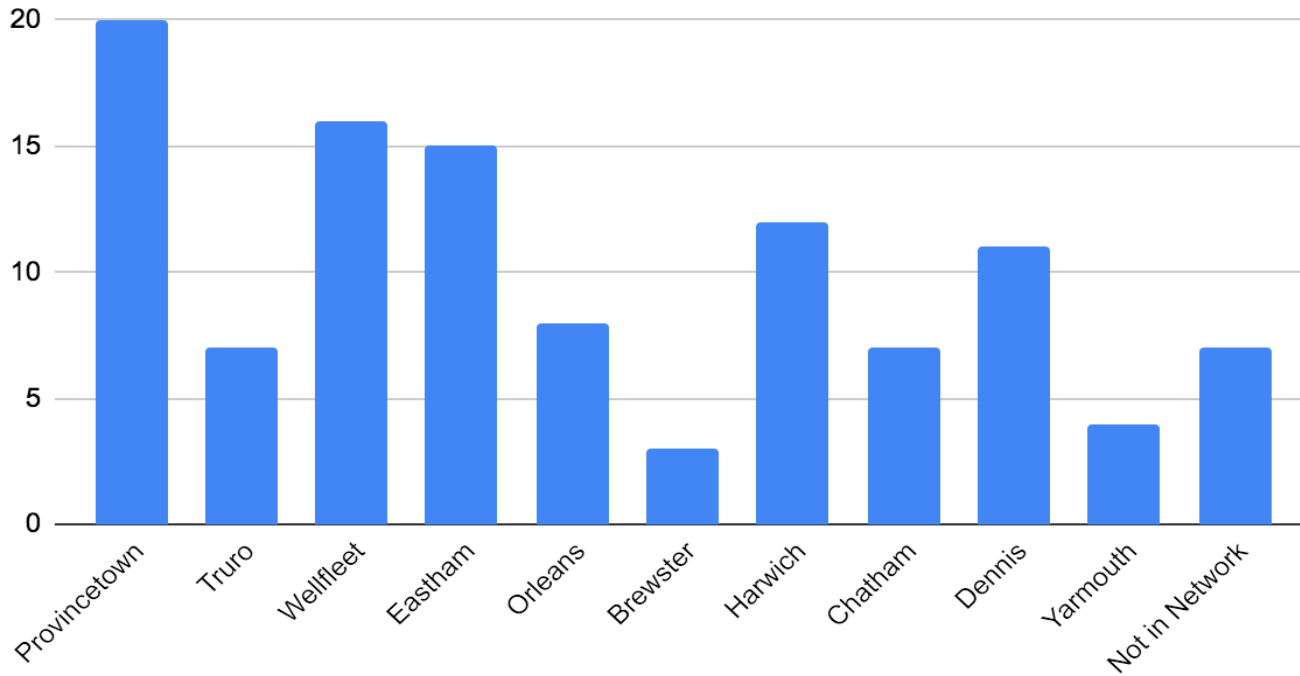


# Patient Data Zip Codes with Overlying Underserved Areas



# Cape towns represented in our research

Number of Navigator Patients Per Zip Code





# Self-Sufficiency Matrix

## SSM Categories

|                             |                  |
|-----------------------------|------------------|
| Mental Health               | Income           |
| Community Involvement       | Food             |
| Disabilities                | Safety           |
| Employment                  | Health           |
| Family/Social Relationships | Life Skills      |
| Transportation              | Adult Education  |
| Housing                     | Substance Abuse  |
| Legal                       | Parenting Skills |
| Child Care                  |                  |
| Child Education             |                  |

## Scoring

- Each category scored 1-5
  - 1 and 2 = In crisis
  - 3 = Stable
  - 4 and 5 = Sufficient
- **Overall SSM Score**
  - Range from 18-90
- Data is captured at **baseline** (i.e., at intake) and at **90-day intervals** to assess longitudinal progress throughout the program

# Data Collection

## eClinicalWorks Electronic Health Record + SSM data file

The screenshot displays the eClinicalWorks interface for a patient named TEMPLATE, URGENTCARE, DOB: 02/29/1960, Age: 54 Y, Sex: Male. The patient's address is 3725 WEST 4100 SOUTH, WEST VALLEY CITY, UT-84120. The encounter date is 01/22/2015, and the provider is Historical Data Migration. The appointment facility is Granger Medical Rv.

The **Subjective:** section includes Chief Complaint(s), HPI, Current Medication, Medical History, Allergies/Intolerances, Surgical History, Hospitalizations, Family History, and Social History. The **ROS:** section lists various medical conditions.

The **Problems List** includes:

- 470 Deviated nasal septum
- 493.91 Status asthmaticus
- 473.9 Sinusitis
- 380.4 Eustachian impaction
- 427.31 Atrial fibrillation
- 565.9 Crohn disease
- 414.00 Coronary artery disease
- 250.00 Type II diabetes mellitus
- 765.10 Preterm infant
- 401.9 Hypertension

|    | A              | B         | C          | D          | E          | F          | G        | H | I       | J          | K      | L    |
|----|----------------|-----------|------------|------------|------------|------------|----------|---|---------|------------|--------|------|
|    | Initial        | 3 Month   | 6 Month    | 9 Month    | 12 month   | 15 month   | 18 month |   | Housing | Employment | Income | Food |
| 1  | Patient Number |           |            |            |            |            |          |   |         |            |        |      |
| 2  |                |           |            |            |            |            |          |   |         |            |        |      |
| 3  |                |           |            |            |            |            |          |   |         |            |        |      |
| 4  | 1              | 5/31/2017 | 8/31/2017  | Discharged | Discharged |            |          |   | 4       | 4          | 2      | 2    |
| 5  | 2              | 6/7/2017  | 9/7/2017   | Discharged | Discharged |            |          |   | 2       | 2          | 3      | 4    |
| 6  | 3              | 6/8/2017  | 9/8/2017   | Discharged | Discharged |            |          |   | 1       | 1          | 2      | 2    |
| 7  | 4              | 5/3/2018  | 8/3/2017   | 12/20/2017 | 3/20/2018  | Discharged |          |   | 5       | 5          | 5      | 5    |
| 8  |                |           |            |            |            |            |          |   |         |            |        |      |
| 9  | 6              | 4/25/2017 | 7/25/2017  | 12/22/2017 | Discharged |            |          |   | 1       | 1          | 2      | 2    |
| 10 | 7              | 4/28/2017 | 7/28/2017  | Discharged | Discharged |            |          |   | 3       | 5          | 3      | 2    |
| 11 | 8              | 5/9/2017  | 8/9/2017   | Discharged | Discharged |            |          |   | 1       | 2          | 2      | 2    |
| 12 | 9              | 5/16/2017 | 8/16/2017  | 12/14/2017 | 3/14/2018  | Discharged |          |   | 4       | 3          | 3      | 3    |
| 13 | 10             | 5/8/2017  | Discharged | Discharged | Discharged |            |          |   | 1       | 1          | 1      | 1    |
| 14 | 11             | 5/15/2017 | 8/15/2017  | 11/15/2017 | 2/15/2018  | 9/19/2018  |          |   | 2       | 3          | 3      | 3    |
| 15 | 12             | 7/19/2017 | #####      | Discharged | Discharged |            |          |   | 5       | 5          | 5      | 5    |
| 16 | 13             | 6/26/2017 | 8/26/2017  | Discharged | Discharged |            |          |   | 1       | 4          | 2      | 2    |
| 17 | 14             | 5/22/2017 | 8/22/2017  | 12/7/2017  | Discharged |            |          |   | 1       | 1          | 1      | 2    |
| 18 | 15             | 5/18/2017 | 8/18/2017  | 12/28/2017 | Discharged |            |          |   | 5       | 5          | 3      | 2    |
| 19 | 16             |           |            |            |            |            |          |   |         |            |        |      |
| 20 | 17             | 5/31/17   | 8/31/2017  | Discharged | Discharged |            |          |   | 1       | 2          | 2      | 2    |
| 21 | 18             | 6/7/2017  | 9/7/2017   | Discharged | Discharged |            |          |   | 4       | 4          | 3      | 3    |
| 22 | 19             | 6/5/2017  | 9/5/2017   | Discharged | Discharged |            |          |   | 1       | 1          | 2      | 2    |
| 23 | 20             | 6/16/2017 | 9/16/2017  | Discharged | Discharged |            |          |   | 5       | 2          | 2      | 2    |
| 24 | 21             | 6/21/2017 | 9/21/2017  | 1/23/2018  | Discharged |            |          |   | 4       | 4          | 3      | 4    |
| 25 | 22             | 6/7/2017  | 9/7/2017   | 12/7/2017  | Discharged |            |          |   | 2       | 2          | 2      | 2    |
| 26 | 23             | 6/13/17   | 9/13/2017  | Discharged | Discharged |            |          |   | 4       | 3          | 3      | 3    |
| 27 | 24             | 6/21/2017 | 9/21/2017  | Discharged | Discharged |            |          |   | 4       | 4          | 4      | 3    |
| 28 | 25             | 6/22/2017 | 9/22/2017  | 12/29/2017 | 3/29/2018  | 6/29/2018  |          |   | 1       | 4          | 3      | 3    |
| 29 | 26             | 7/13/2017 | #####      | 1/13/2018  | 4/13/2018  | 7/13/2018  |          |   | 1       | 3          | 2      | 2    |
| 30 | 27             | 6/4/2017  | 9/4/2017   | 12/4/2017  | Discharged |            |          |   | 4       | 4          | 3      | 2    |
| 31 | 28             | 6/7/2017  | 9/7/2017   | Discharged | 3/29/2018  | Discharged |          |   | 1       | 3          | 3      | 3    |
| 32 | 29             |           |            |            |            |            |          |   |         |            |        |      |
| 33 | 30             | 6/21/2017 | Discharged | Discharged | Discharged |            |          |   | 2       | 2          | 2      | 1    |
| 34 | 31             | 6/21/2017 | Discharged | Discharged | Discharged |            |          |   | 2       | 2          | 2      | 1    |

# Health Advocacy



- Mass health
  - Insurance Enrollment Assistance at OCHS
- Veterans Affairs
- Outer Cape Health Services
  - **Navigator Program**
    - Lower and outer cape
    - Advocate for, and help connect, at risk patients to existing services
    - Provide therapy and other services
    - Help providers connect navigators with patients



**VA**

U.S. Department  
of Veterans Affairs





RESULTS

# Risk Tiers

Risk tiers suggested based on Navigator experience and in current usage in field

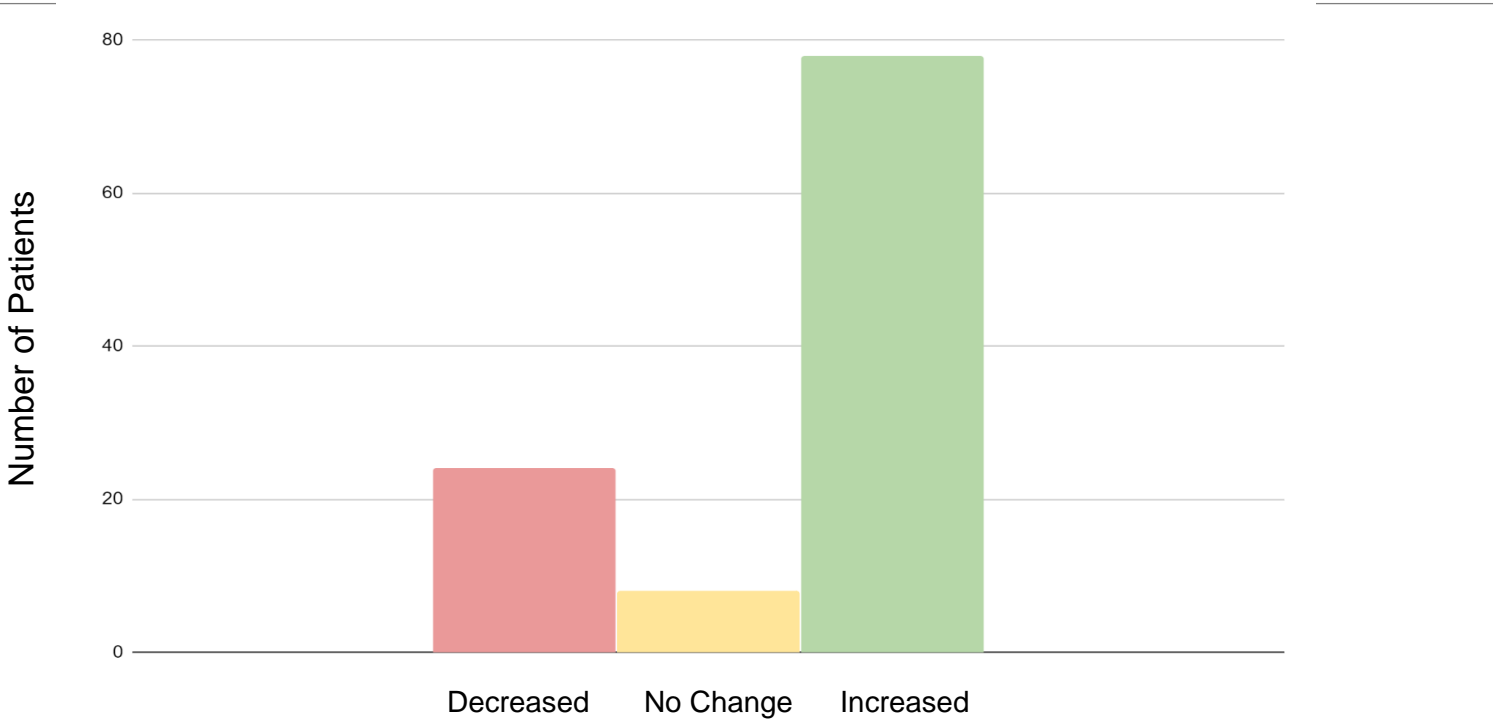
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| Risk Tier   | SSM Score   |
|-------------|-------------|
| Low risk    | 70 or above |
| Medium risk | 61-69       |
| High risk   | 60 or below |

# OCHS Clerkship Data Collection

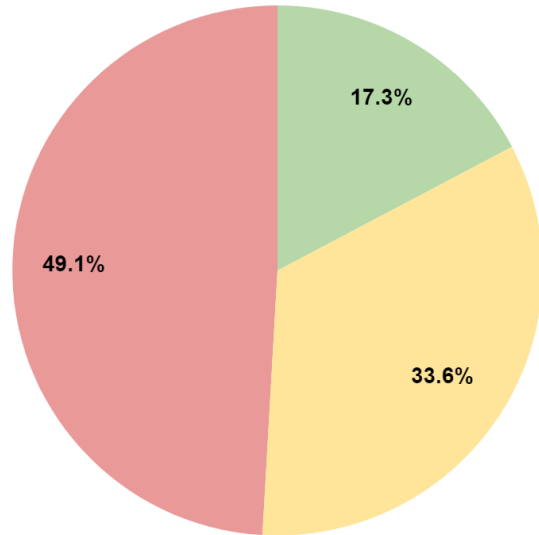
| Patient Number | Zip Code   | Town           | Town<br>Ptown=1, Truro =2,<br>Wellfleet =3, Eastham | Start Date | Length in Program (mo) | Activity Status<br>0=discharged, 1=active | Initial SSM Score | Final SSM Score | Change in tier<br>-1=worse, 0=same,<br>1=Improved |
|----------------|------------|----------------|---|------------|------------------------|---|-------------------|-----------------|---|
| 1              | 02651-0701 | North Eastham  | 4   | 5/31/2017  | 3                      | 0   | 69                | 75              | 1   |
| 4              | 02639-1117 | Dennis Port    | 9   | 5/3/2018   | 9                      | 0   | 69                | 76              | 1   |
| 6              | 02642-0631 | Eastham        | 4   | 4/25/2017  | 7                      | 0   | 60                | 74              | 1   |
| 7              | 02633-1938 | Chatham        | 8   | 4/28/2017  | 3                      | 0   | 63                | 61              | 0   |
| 8              | 02645-2010 | East Harwich   | 7   | 5/9/2017   | 3                      | 0   | 52                | 59              | 0   |
| 9              | 02642-1501 | Eastham        | 4   | 5/16/2017  | 10                     | 0   | 57                | 54              | 0   |
| 11             | 02653-1801 | Orleans        | 5   | 5/15/2017  | 16                     | 1   | 54                | 80              | 1   |
| 13             | 02645-2414 | Harwich        | 7   | 6/26/2017  | 2                      | 0   | 55                | 65              | 1   |
| 15             | 02645-1405 | Harwich        | 7   | 5/18/2017  | 7                      | 0   | 63                | 79              | 1   |
| 17, 90         | 02532      | Buzzards Bay   | 11  | 5/31/2017  | 16                     | 0   | 38                | 53              | 0   |
| 18             | 02638-1970 | Dennis         | 9   | 6/7/2017   | 3                      | 0   | 78                | 80              | 0   |
| 19             | 02631-3019 | Brewster       | 6   | 6/5/2017   | 5                      | 0   | 66                | 65              | 0   |
| 20             | 02642-2282 | Eastham        | 4   | 6/16/2017  | 3                      | 0   | 62                | 62              | 0   |
| 21             | 02662-0121 | South Orleans  | 5   | 6/21/2017  | 7                      | 0   | 67                | 69              | 0   |
| 22             | 02631-1218 | Brewster       | 6   | 6/7/2017   | 6                      | 0   | 65                | 69              | 0   |
| 25             | 02651-0481 | North Eastham  | 4   | 6/22/2017  | 12                     | 1   | 52                | 45              | 0   |
| 26, 168        | 02651-0481 | North Eastham  | 4   | 7/13/2017  | 13                     | 0   | 54                | 58              | 0   |
| 27             | 02645-1021 | Harwich        | 7   | 6/4/2017   | 6                      | 0   | 64                | 77              | 1   |
| 28, 205        | 02660-2913 | South Dennis   | 9   | 6/7/2017   | 13                     | 0   | 59                | 61              | 1   |
| 31             | 02645-1960 | Harwich        | 7   | 6/21/2017  | 8                      | 0   | 60                | 69              | 1   |
| 35             | 02631-1782 | Brewster       | 6   | 7/6/2017   | 11                     | 1   | 68                | 79              | 1   |
| 38             | 02642-2831 | Eastham        | 4   | 7/27/2017  | 9                      | 1   | 62                | 60              | -1  |
| 40             | 02645-2520 | Harwich        | 7   | 7/21/2017  | 14                     | 1   | 63                | 67              | 0   |
| 41             | 02664      | South Yarmouth | 10  | 7/13/2017  | 9                      | 0   | 68                | 82              | 1   |
| 43, 123        | 02638-2515 | Dennis         | 9   | 7/26/2017  | 18                     | 1   | 61                | 56              | -1  |
| 50             | 02653      | Orleans        | 5   | 8/18/2017  | 5                      | 0   | 52                | 62              | 1   |
| 51             | 02667-1151 | Wellfleet      | 3   | 8/28/2017  | 9                      | 1   | 58                | 72              | 1   |
| 55             | 02645      | Harwhich       | 7   | 12/11/2017 | 8                      | 0   | 63                | 70              | 1   |

# Patient Progress in Navigator Program

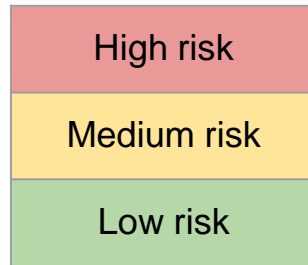
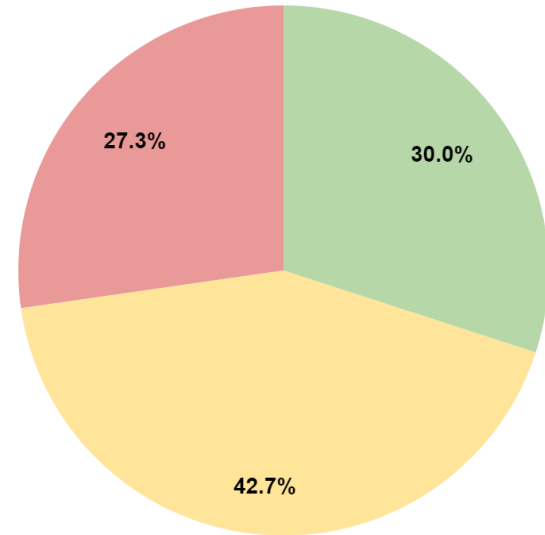


# Change in Risk Tier throughout Program

Baseline SSM



Most recent SSM

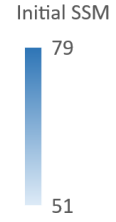
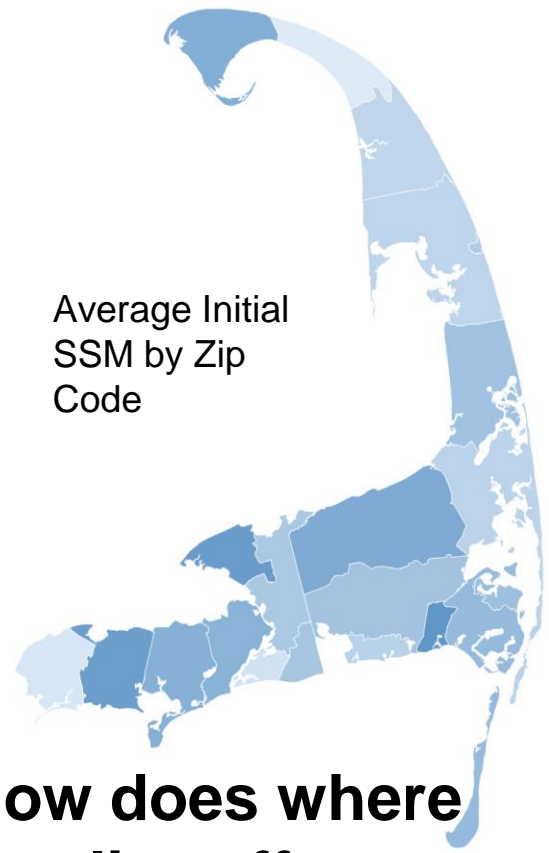


On average, patients improved by 5 points

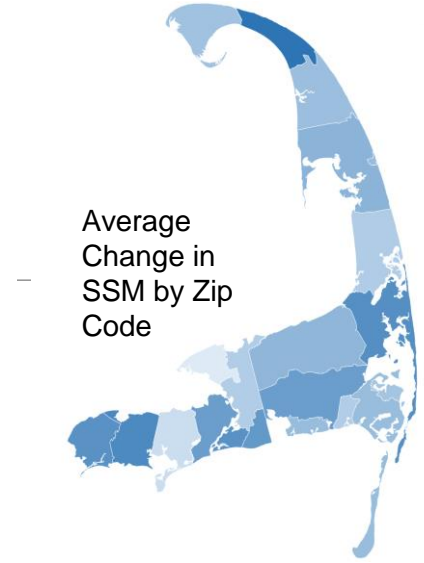


# How does where you live affect your SSM Score?

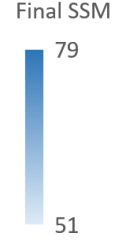
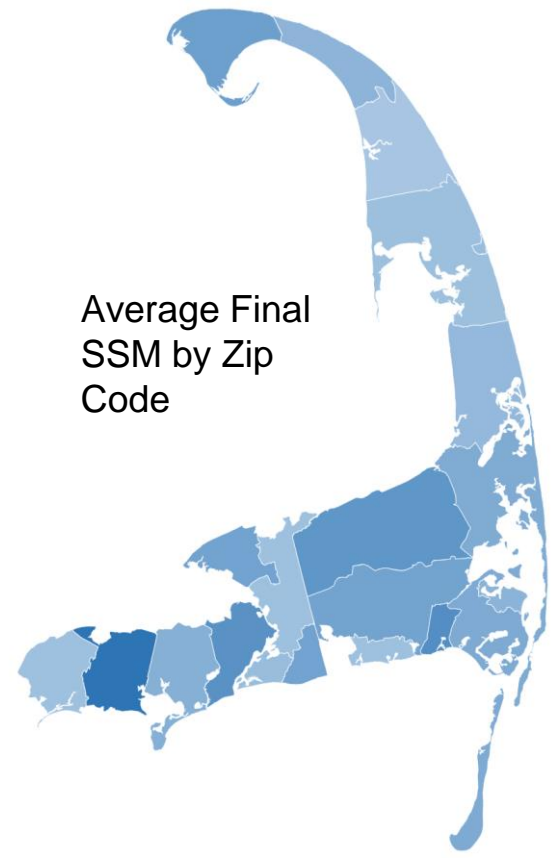
Average Initial SSM by Zip Code



Average Change in SSM by Zip Code



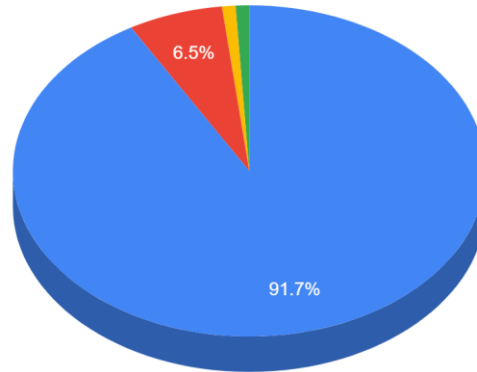
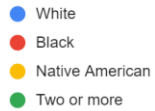
Average Final SSM by Zip Code



# Demographic Data (1 of 2)

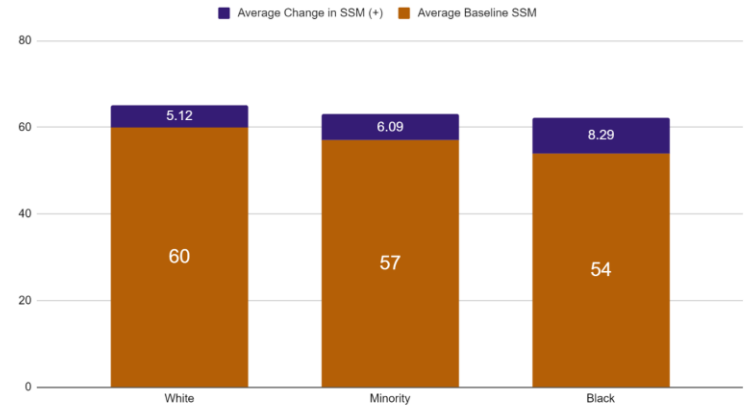
- ❖ The vast majority of patients are white
- ❖ Black patient population ratio is twice as large as in the demographic data
- ❖ Black patients tend to start at lower SSM baselines
- ❖ They also tend to make more progress

Racial Breakdown of Service Population



1.8% of patients were Hispanic/LatinX

SSM Measures by Race



## Demographic Data (2 of 2)

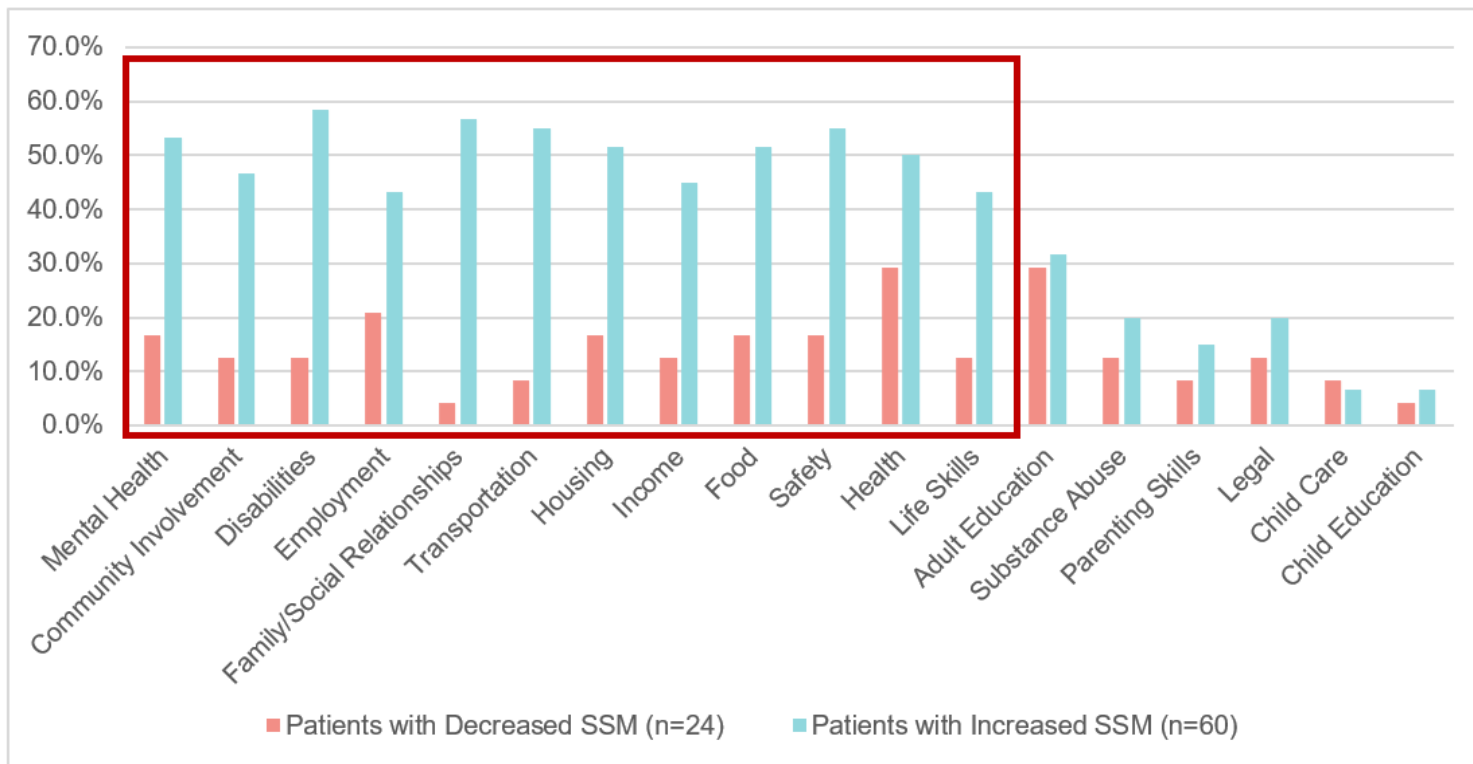
- ❖ Different population groups may have different needs
- ❖ Black patients fare worse in the housing, community involvement, employment, income, and food categories
- ❖ Mental health and disabilities showed greater effect on White patients

| Black Patients (n=7)                     |                                       |             |
|--|---------------------------------------|-------------|
| SSM Categories: Lowest to Highest Scores |                                       |             |
|  |                                       | Avg. Scores |
| 1  | Housing, Community Involvement        | 1.571       |
| 3  | Employment                            | 1.857       |
| 4  | Income, Food                          | 2           |
| 6  | Mental Health                         | 2.285       |
| 7  | Mobility, Family/Social Relationships | 2.571       |
| 9  | Health                                | 2.714       |
| 10                                       | Life Skills                           | 3.285       |
| 11                                       | Adult Education, Safety, Disabilities | 3.714       |
| 14                                       | Parenting Skills, Child Care          | 3.857       |
| 16                                       | Legal                                 | 4           |
| 17                                       | Child Education                       | 4.428       |
| 18                                       | Substance Abuse                       | 5           |

| White Patients (n=99)                    |                             |            |
|--|-----------------------------|------------|
| SSM Categories: Lowest to Highest Scores |                             |            |
|  |                             | Avg. Score |
| 1  | Mental Health               | 2.134      |
| 2  | Community Involvement       | 2.36       |
| 3  | Disabilities                | 2.371      |
| 4  | Employment                  | 2.639      |
| 5  | Family/Social Relationships | 2.659      |
| 6  | Income                      | 2.701      |
| 7  | Food                        | 2.938      |
| 8  | Mobility                    | 2.969      |
| 9  | Housing                     | 3.031      |
| 10                                       | Safety                      | 3.092      |
| 11                                       | Life Skills                 | 3.134      |
| 12                                       | Substance Abuse             | 3.804      |
| 13                                       | Health                      | 3.845      |
| 14                                       | Adult Education             | 4.103      |
| 15                                       | Legal                       | 4.556      |
| 16                                       | Parenting Skills            | 4.577      |
| 17                                       | Child Care                  | 4.89       |
| 18                                       | Child Education             | 4.917      |

# How does improvement in each category impact overall score?

Percent of Patients who Improved per SSM Category



# Conclusion: Clinically Relevant Needs of Patients in Navigator Program

## High Risk Needs Determined by Navigator Program

- ❖ Mental Health
- ❖ Health
- ❖ Housing
- ❖ Transportation

## Risk Needs Determined by PHC Data Analysis

- ❖ Employment
- ❖ Income
- ❖ Life Skills
- ❖ Housing
- ❖ Transportation
- ❖ Mental Health
- ❖ Disabilities
- ❖ Community Involvement
- ❖ Family/Social Relationships

| SSM Sub-Category            |
|-----------------------------|
| Mental Health               |
| Community Involvement       |
| Disabilities                |
| Employment                  |
| Family/Social Relationships |
| Transportation              |
| Housing                     |
| Income                      |
| Food                        |
| Safety                      |
| Life Skills                 |
| Substance Abuse             |
| Adult Education             |
| Parenting Skills            |
| Legal                       |
| Health                      |
| Child Care                  |
| Child Education             |

# Acknowledgements

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- The School of Medicine: Dr. Suzanne Cashman,

## **Outer Cape Health Services**

- Andy Lowe, Leo Blandford, Brianne Smith
- Thank you to the Navigators for allowing us to shadow and attend case conference



# Resources

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- ❖ *Measuring Your Impact on Loneliness Later in Life*. Campaign to End Loneliness.
- ❖ Social Needs Screening Toolkit. (2016). *Health Leads*.
- ❖ “Outer Cape Cod Towns PUMA, MA.” *Data USA*.
- ❖ “Data by Town.” *STATS Cape Cod*, Cape Cod Commission.
- ❖ *UDS Mapper*, [www.udsmapper.org/](http://www.udsmapper.org/).
- ❖ Outer Cape Health Services, <https://outercape.org/>