Defining Our Population: Geography

All Participants:

All Participants in Worcester:
Definition Our Population: Age

- Median age of our sample: 36
- Range of our sample: 1-77
- Worcester median age: 34.7

Figure 1: histogram of participant ages. Age approximated a bimodal distribution with peaks in the 30s and 50s.
Defining Our Population: Gender

Our sample:

- Male: 27%
- Female: 70%
- Other: 0%
- Prefer not to answer: 3%
### Defining Our Population: Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Our Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>White/caucasian</td>
<td>46 (30%)</td>
</tr>
<tr>
<td>African/African American/Black</td>
<td>32 (21%)</td>
</tr>
<tr>
<td>Latinx/hispanic</td>
<td>33 (21%)</td>
</tr>
<tr>
<td>Asian</td>
<td>12 (8%)</td>
</tr>
<tr>
<td>Multiple races/ethnicities</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Native American/indigenous</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>32 (21%)</td>
</tr>
</tbody>
</table>

#### Worcester

World Population Review 2021
Defining Our Population: Language

Worcester

Only English | Spanish | Other Indo-European Languages | Asian and Pacific Island Languages | Other Languages
65.4% | 5.0% | 5.6% | 8.0% | 16.0%

World Population Review 2021
Needs and Trends: Food Security

Figure 33: Percent of Population Receiving Food Stamp/SNAP Benefits (Service Area), 2012-2016

Source: U.S. Census Bureau, 2016 5-Year American Community Survey.

Figure 36: Grocery gaps in Massachusetts

Source: Massachusetts Public Health Association
# Needs and Trends: Smoking

**Figure 41: Percent of Adult Population Who Smokes (Service Area), 2011-2015 Estimates**

<table>
<thead>
<tr>
<th>Adult Smoking (%)</th>
<th>MA</th>
<th>Grafton</th>
<th>Holden</th>
<th>Leicester</th>
<th>Millbury</th>
<th>Shrewsbury</th>
<th>W. Boylston</th>
<th>Worcester</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Needs and Trends: Alcohol Consumption

<table>
<thead>
<tr>
<th></th>
<th>MA</th>
<th>Grafton</th>
<th>Holden</th>
<th>Leicester</th>
<th>Millbury</th>
<th>Shrewsbury</th>
<th>W. Boylston</th>
<th>Worcester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Number in BSAS Licensed Facilities (2014)</strong></td>
<td>85,823</td>
<td>161</td>
<td>101</td>
<td>126</td>
<td>223</td>
<td>253</td>
<td>0-100</td>
<td>4,915</td>
</tr>
<tr>
<td><strong>Alcohol as Primary Drug of Use (%)</strong></td>
<td>31.9</td>
<td>34.2</td>
<td>26.7</td>
<td>30.2</td>
<td>27.8</td>
<td>35.2</td>
<td>35.1</td>
<td>24.8</td>
</tr>
<tr>
<td><strong>Alcohol/Sub. Use Related Hospitalizations (Age-adjusted per 100,000), 2008-2012</strong></td>
<td>337.56</td>
<td>136.93</td>
<td>145.54</td>
<td>194.7</td>
<td>198</td>
<td>122.01</td>
<td>164.72</td>
<td>338.82</td>
</tr>
<tr>
<td><strong>Alcohol/Sub. Use Related ED Discharges (Age-adjusted per 100,000), 2008-2012</strong></td>
<td>858.83</td>
<td>426.62</td>
<td>389.64</td>
<td>426.34</td>
<td>649.24</td>
<td>372.32</td>
<td>488.09</td>
<td>1209.27</td>
</tr>
</tbody>
</table>

*Source is the Massachusetts Bureau of Substance Abuse Services (BSAS), 2014*

**Source is Massachusetts Hospital Inpatient and Emergency Visit Discharges, 2008-2012 (Accessed through MassCHIP)**

Shading represents statistical significance compared to the Commonwealth. Figures highlighted in red are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.
Needs and Trends: Health Insurance

Figure 45: Health Insurance Coverage (Service Area), 2012-2016

Source: US Census Bureau, American Community Survey
### Needs and Trends: Diabetes

#### Figure 47: Diabetes (Service Area)

<table>
<thead>
<tr>
<th></th>
<th>MA</th>
<th>Grafton</th>
<th>Holden</th>
<th>Leicester</th>
<th>Millbury</th>
<th>Shrewsbury</th>
<th>W. Boylston</th>
<th>Worcester</th>
</tr>
</thead>
</table>
| **Hospitalizations**
  (Age-adjusted rates per 100,000) (2008-2012) | 135.0 | 71.0    | 79.0   | 155.1     | 123.2    | 89.6       | 96.4        | 180.1     |
| **Related Hospitalizations**
  (Age-adjusted rates per 100,000) (2008-2012) | 1,845 | 1,144.2 | 1,1288.7 | 1,922.5 | 1,662.0 | 1,391.8 | 1,362.2 | 2,450.6 |
| **ED Discharges**
  (Age-adjusted rates per 100,000) (2008-2012) | 133.4 | 48.8    | 69.1   | 107.7     | 85.0     | 84.9       | 102.4       | 185.4     |
| **Mortality**
  (Age-adjusted rates per 100,000) (2015)* | 16.8  | --1.0   | --1.0 | --1.0     | --1.0    | 16.4       | --1.0       | 26.1      |

Source: Massachusetts Hospital Inpatient and Emergency Visit Discharges, 2008-2012 (Accessed through MassCHIP)

*Source is Massachusetts Vital Records, 2015 || A value of --1 means data is suppressed due to low counts

Shading represents statistical significance compared to the Commonwealth. Figures highlighted in red are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.
### Needs and Trends: Cardiovascular Disease

#### Figure 48: Cardiovascular Disease (Age-adjusted rates per 100,000) (Service Area)

<table>
<thead>
<tr>
<th>Hypertension</th>
<th>MA</th>
<th>Grafton</th>
<th>Holden</th>
<th>Leicester</th>
<th>Millbury</th>
<th>Shrewsbury</th>
<th>W. Boylston</th>
<th>Worcester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related Hospitalizations (2009-2012)</td>
<td>4,025.1</td>
<td>2,959.6</td>
<td>3,171.6</td>
<td>3,813.0</td>
<td>3,901.8</td>
<td>3,568.9</td>
<td>3,362.1</td>
<td>4,766.2</td>
</tr>
<tr>
<td>Mortality (2015)*</td>
<td>--1</td>
<td>--1</td>
<td>--1</td>
<td>--1</td>
<td>--1</td>
<td>--1</td>
<td>--1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

**Heart Disease**

| Hospitalizations (2009-2012) | 980.3 | 771.8 | 859.1 | 1,015.2 | 930.5 | 933.8 | 869.3 | 1,022.3 |
| ED Discharge (2009-2012) | 214.9 | 138.6 | 126.3 | 187.9 | 145.2 | 179.1 | 168.1 | 152.1 |
| Mortality (2015)* | 138.7 | 170.9 | 121.5 | 149.6 | 173.6 | 146.5 | 106.3 | 161.5 |

**Major Cardiovascular Disease**

| Hospitalizations (2009-2012) | 1,243.9 | 1,053.1 | 1,154.2 | 1,366.7 | 1,367.2 | 1,215.5 | 1,134.6 | 1,420.7 |
| ED Discharge (2009-2012) | 402.1 | 228.9 | 216 | 302.1 | 252.8 | 283.8 | 263.4 | 323.6 |
| Mortality (2015)* | 180.8 | 210.1 | 151 | 215.6 | 253.9 | 188.4 | 145.4 | 208.1 |

**Heart Failure**

| Hospitalizations (2009-2012) | 273.0 | 147.0 | 196.2 | 251.8 | 223.1 | 258.1 | 237.1 | 313.5 |
| Related Hospitalizations (2009-2012) | 1,191.5 | 757.6 | 1,088.8 | 1,341.8 | 1,096.4 | 1,139.2 | 1,011.7 | 1,452.0 |

**Cerebrovascular Disease**

| Hospitalizations (2009-2012) | 227.8 | 165.5 | 200.3 | 222.4 | 269.0 | 170.2 | 172.75 | 236.4 |
| Mortality (2015)* | 28.4 | --1 | --1 | --1 | 57.8 | 29.6 | 33.6 | 31.7 |

*Source: Massachusetts Hospital Inpatient and Emergency Visit Discharges (Accessed through MassCHIP)*

*Shading represents statistical significance compared to the Commonwealth. Figures highlighted in blue are statistically lower compared to the Commonwealth overall, while figures highlighted in red are statistically higher.*

*A value of –1 means data is suppressed due to low counts.*
Interprofessional

The scope of the needs of the community and those that participate in helping those needs is wide and variable for each community. Here in Worcester, there are several programs and members of the community that serve to lead population-oriented physical activity leadership.
Interprofessional

Healthcare Providers
- Doctor, NP, PA, etc...
- Holistic healthcare
- Strength: Medical Ethos
- Limitations: Following up

YWCA/ YMCA/ Medicine in Motion
- Population/Community Health
- Strength: Program offering
  - Summer Fitness
- Limitations: Who can attend
Interprofessional

The City

- Parks & Rec, Schools (WPI)
- Locations and equipment
- Be in direct contact often

Volunteers!

- Instructors, Maintenance
- Program leadership, continuity
- They’re here cause they want to be!
Interprofessional
More than Mentioned
National Advocacy for Physical Activity: PAPREN

- Physical Activity Policy Research And Evaluation Network
- PAPREN's seeks to advance the evidence base supporting physical activity policy and translation of evidence into practice at local, state, and national levels
- Physical activity researchers across the country work together to link health-related outcomes to policy
- Advocate for a built-environment that promotes physical activity
- For example, their research includes a nationwide evaluation of zoning codes associated with walking behaviors
Advocacy for Physical Activity in Worcester: Newton Hill Fitness Course

- Created by Dr. Philip Bolduc, a Family Medicine physician
- 12-stations with durable equipment
- Easy-to-follow instructions at each station
- Opportunity to exercise and spend time in nature
- Free → Let’s tell Worcester residents about this!
Advocacy for Physical Activity in Worcester: Walk with a Doc

- Grassroots organization started in 2005
- Impacting behavior change in patients outside of the clinical setting
- Doctor leads patients on a local walk
  - Brief health discussion
  - Healthy snacks, optional blood pressure checks
  - Normal, everyday conversation & exercise with community members
- Over 500 chapters internationally
- Dr. Liz Erban @ Lake Park
Advocacy for Physical Activity in Worcester: Walk with a *Future* Doc

- Opportunity for medical students to get involved
- WWAD aims to bring lifestyle medicine education into practice for a new generation of physicians
- How to get started:
  1. Visit site for tools & scholarship opportunity for med students
  2. Fill out contact form for guidance from WWAD admin
  3. Sign up & plan
  4. Walk!

Advocacy for Physical Activity in Worcester: YWCA of Central Massachusetts

- Summer SPLASH Program
  - Swim & Play, Aquatic Safety and Health
  - **Free** for children ages 7-12
  - Teaching life-saving aquatics skills
  - 2 lessons per week in July
  - Lessen disparity in aquatics education ([https://ywcacm.org/splash/](https://ywcacm.org/splash/))
  - *Spread the word!*
- Discounted gym memberships
- **Fitness in the Parks**
<table>
<thead>
<tr>
<th>Class (number of classes)</th>
<th>Day/time</th>
<th>Location</th>
<th>Number of participants per class (Median, IQR)</th>
<th>Number of unique participants</th>
<th>Age of participants, years (Median, range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boot Camp (9)*</td>
<td>Monday 5:30pm</td>
<td>Worcester Common</td>
<td>9 (8 - 10)</td>
<td>36</td>
<td>37.5 (10 - 66)</td>
</tr>
<tr>
<td>Yoga/Pilates (8)</td>
<td>Monday 5:30pm</td>
<td>Beaver Brook Park</td>
<td>5.5 (4 - 11.5)</td>
<td>34</td>
<td>43 (19 - 74)</td>
</tr>
<tr>
<td>Tai Chi (11)</td>
<td>Tuesday 5:30pm</td>
<td>Crompton Park</td>
<td>7 (4.5 - 7.5)</td>
<td>24</td>
<td>52.5 (22 - 68)</td>
</tr>
<tr>
<td>Groove (11)</td>
<td>Wednesday 5:30pm</td>
<td>Cristoforo Colombo (East) Park</td>
<td>7 (1.5 - 9)</td>
<td>36</td>
<td>35 (3 - 67)</td>
</tr>
<tr>
<td>Dance Fit (8)</td>
<td>Thursday 5pm</td>
<td>Oread/Castle Park</td>
<td>2.5 (0.75 - 4.25)</td>
<td>16</td>
<td>35 (5 - 65)</td>
</tr>
<tr>
<td>Soccer (9)</td>
<td>Friday 5:30pm</td>
<td>Vernon Hill Park</td>
<td>6 (3 - 9)</td>
<td>29</td>
<td>12 (1 - 61)</td>
</tr>
<tr>
<td>Fit Families (10)*</td>
<td>Saturday 9am</td>
<td>Crystal/University Park</td>
<td>3 (1.5 - 4)</td>
<td>12</td>
<td>45 (11 - 77)</td>
</tr>
<tr>
<td>Karate (7)</td>
<td>Sunday 10am</td>
<td>Great Brook Valley Playground</td>
<td>1 (0 - 1.5)</td>
<td>6</td>
<td>39.5 (11 - 53)</td>
</tr>
</tbody>
</table>
Summer Fitness in the Parks 2021

Data collection via phone calls/emails
  - Participant characteristics and feedback
  - Instructor feedback

Data analysis for trends in demographics, exercise and dietary, habits, likes/dislikes/suggestions
How Active Were Our Participants Prior to FITP?

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to a gym (Number, %)</td>
<td>18 / 33 (54%)</td>
</tr>
<tr>
<td>Physical activity (Number, %)</td>
<td></td>
</tr>
<tr>
<td>Any regular aerobic exercise</td>
<td>22 / 33 (66%)</td>
</tr>
<tr>
<td>&gt;= 150 min/wk aerobic exercise</td>
<td>13 / 33 (39%)</td>
</tr>
<tr>
<td>Any regular strength training</td>
<td>14 / 33 (42%)</td>
</tr>
<tr>
<td>&gt;= 2 days/wk strength training</td>
<td>14 / 33 (42%)</td>
</tr>
<tr>
<td>&gt;= 5 servings fruits/vegetables per day (Number, %)</td>
<td>18 / 33 (54%)</td>
</tr>
</tbody>
</table>
Learning Through Service

Participant/Instructor Feedback

Ideal timing of classes:
Start time ~6pm weekdays, early mornings ~7am, or weekend afternoons

Favorite part of the program:
Community building, excellent instructors, spending time outdoors

Suggestions:
Improve advertising, clarify location and transportation/parking, add more class offerings and times, provide mats/equipment, make this program available year round

How did participants hear about FITP

Points scored
- Website: 4.3%
- Flyer: 8.7%
- TV: 8.7%
- Work: 13.0%
- Newspaper: 17.4%
- Social media: 21.7%
- Word of mouth: 26.1%
Learning Through Service: Key Takeaways

Getting people active is about more than just an Rx for exercise!

Critical SDOH to consider:

- **Socioeconomic Status**: Access to exercise classes/facilities needs to be affordable and available year-round
- **Access to Transportation/Parking**: People need to be able to get to a safe space to exercise
- **Food Access**: Exercise is a great start, but access to healthy foods is the other half of the battle for physical fitness

Other Factors:

- **Community Development**: An exercise regimen is easier to stick to with support from family friends, peers, or trainers
- **Convenience**: People have different schedules and routines; classes must be at the right time
Acknowledgements

Dr. Elizabeth Erban - UMMHC Family Medicine, PCHC Team Leadership
Collin Leibold - UMMS, PCHC Team Leadership
Jermoh Kamara and Alfee Westgroves - YWCA of Central Massachusetts
Dr. Philip Bolduc - UMMHC Family Medicine, Friends of Newton Hill Park
Janet Huehls - UMass Memorial Weight Center
Jennifer Misiaszek - Boston Parks and Recreation Department
Blue Cross/Blue Shield
Worcester Parks & Recreation Department
Worcester Department of Health and Human Services
Medicine in Motion
YMCA/LiveStrong Foundation of Central Massachusetts
UMMS Population and Community Health Clerkship Team