



Analysis of Opioid-Related Overdose Deaths on Cape Cod, 2004-2014: Implications for Trades/Service Workers and the Straight-To- Work Population

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Prepared for:

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A. INTRODUCTION

The aim of this study is to analyze and understand opioid-related deaths in Barnstable County for the purpose of identifying groups at disproportionate risk and to then provide insight and recommendations for addressing these risks.

As a Massachusetts Opioid Abuse Prevention Collaborative (MOAPC) grant recipient¹, the Barnstable County Department of Human Services has completed a preliminary analysis of deaths by poisoning from opioids in Barnstable County (Cape Cod) between the years 2004-2014. Those disproportionately impacted included men (72%), those employed in the trades and service industries (65%), and those with a high school education or less (69%).

The results reveal an over-representation of opioid-related deaths among persons working in the trades and service industries and among those with a high school-only level of education. Within the trades/services occupational categories persons employed in the construction trades appear to be at particularly high risk of death from opioid-related overdose. The percentage of decedents employed in the Construction trades is greatly in excess of their representation in the workforce.

This combination of higher death rates and lower levels of formal educational attainment among trades/service work has drawn the attention of substance misuse prevention specialists and, for purposes of study and intervention, is called the Straight-to-Work (STW) population. The STW population is described as those persons who have gone straight from high school into the workforce. Very frequently they find work in the trades and service industries.

¹ In Massachusetts, funding from The Bureau of Substance Abuse Services (BSAS) provides grants to municipalities (cities and towns) to address the issue of opioid use and misuse and in the Commonwealth. The **Massachusetts Opioid Abuse Prevention Collaborative (MOAPC)** supports the implementation of local policy, practice, systems, and environmental change for three key purposes: 1. to prevent the misuse of opioids (including first use), 2. to prevent and reduce unintentional deaths and nonfatal hospital events associated with opioid poisonings, and 3. to increase both the number and the capacity of municipalities across the Commonwealth addressing these issues. MOAPC emphasizes the integration of consistent data-driven planning process across the Commonwealth, focusing on the implementation of effective and sustainable strategies and interventions (<http://masstapp.edc.org/massachusetts-opioid-abuse-prevention-collaborative>).

With this study the Barnstable County Department of Human Services presents preliminary recommendations to the Barnstable County Regional Substance Use Council (RSAC) to prevent and reduce the risk of opioid misuse and opioid-related deaths among two inter-related groups: STW youth/young adults and workers in the trades and service industries. Members of the STW population enter the workforce in the trades and services occupations in high numbers.

To further understand the findings on Barnstable County's opioid-related deaths a qualitative study design was used to collect information via three focus groups and four key informant interviews with entities that represent important sub-populations within the STW target population: trades and service workers, and non-traditional high school students. Following a review of the study results preliminary recommendations are offered for the Barnstable County Regional Substance Use Council's (RSAC) ² consideration.

B. METHODS

1. Quantitative Methods

The Barnstable County Department of Human Services conducted an analysis of death records of residents of Barnstable County for the years 2004 to 2014. Death records with a cause of death of "accidental poisoning" were received from the Massachusetts Department of Public Health Office of Vital Record. These records were further analyzed using International Classification of Disease, Tenth Revision (ICD-10) codes for underlying cause of death attributable to opioid involvement, using published definitions from the Massachusetts Department of Public Health.³ The Standard Certificate

² The Barnstable Regional Substance Abuse Council brings together a diverse group of stakeholders representing local government, elected officials, law enforcement, the courts, schools, healthcare providers, and community coalitions. The RSAC was convened and funded in 2014 by the Barnstable County Department of Human Services in response to a need for regional coordination around the issue of substance use. It has undertaken a systematic approach to connecting the variety of substance use related efforts already underway across the region and is implementing regional recommendations for further action.

³ Cases were defined using the International Classification of Disease (ICD-10) codes for mortality. The following codes were selected from the underlying cause of death field to identify poisonings/overdoses: X40-X49, X60-X69, X85-X90, Y10-Y19, and Y35.2. All multiple cause of death fields were then used to identify an opioid-related death: T40.0, T40.1, T40.2, T40.3, T40.4, and T40.6.

of Death for the Commonwealth of Massachusetts is appended to this document (Appendix A) for reference.

Deaths were classified as opioid-related if the individual had a positive test for semi-synthetic opioids (e.g. morphine, codeine, hydrocodone, oxycodone), methadone, or synthetic opioids (e.g. fentanyl, tramadol), and deaths were classified as heroin-related if the individual had a positive test for heroin.

Demographic characteristics explored included gender, age, race/ethnicity of the decedent, highest level of education and occupation.

2. Qualitative Methods

To better understand the factors contributing to the impact of opioid-related deaths on the STW population Barnstable County conducted exploratory research via focus groups and key informant interviews. Focus groups and key informant interviews were conducted as follows:

Three focus groups with non-traditional high school students:

- A 4-year vocational technical high school
- A school for students who work or have internships during the day
- A program designed for students with behavioral or health needs who are at risk of not graduating high school

Four key informant interviews:

- Three harm reduction services staff at two separate offices (two in Falmouth, one in Hyannis)
- Local lobsterman

C. RESULTS

C.1. RESULTS: Opioid-Related Deaths

Between 2004-2014 there were 281 opioid-related overdose deaths among Barnstable County residents with marked year-over-year increases beginning in 2012 (24 deaths) through 2016 (78 deaths) (MA DPH Office of Vital Records, Aug. 2017).

The analysis of mortality data collected through the registration of death certificates in Barnstable County from 2004-2014 showed that those disproportionately impacted included: men (72%), those employed in the trades (65%), and those with a high school education or less (69%). Employment and educational attainment are typically highly correlated with one another.

- a. **All Opioid-Related Deaths.** During this 10-year period 281 deaths in Barnstable County were attributed to opioid-related poisoning
- 72% of these decedents were male (n=201), and 28% were female (n=80),
 - 51% (n=143) of these decedents were between the ages 25-44 (see Figure 1),
 - 69% (n=193) of these decedents had a high school education or less, versus 31% of adults in Barnstable County.
 - Deaths by race generally mirror that of Barnstable County's population by race. Among all opioid-related decedents 94% (263) were classified as White-Alone, 5% (13) were Black, and less than 1% each were Native American (2), Asian (1), and White-Hispanic (2)

Figure 1. Tally of Opioid-Related Deaths among Barnstable County Residents by Age Category, 2004-2014

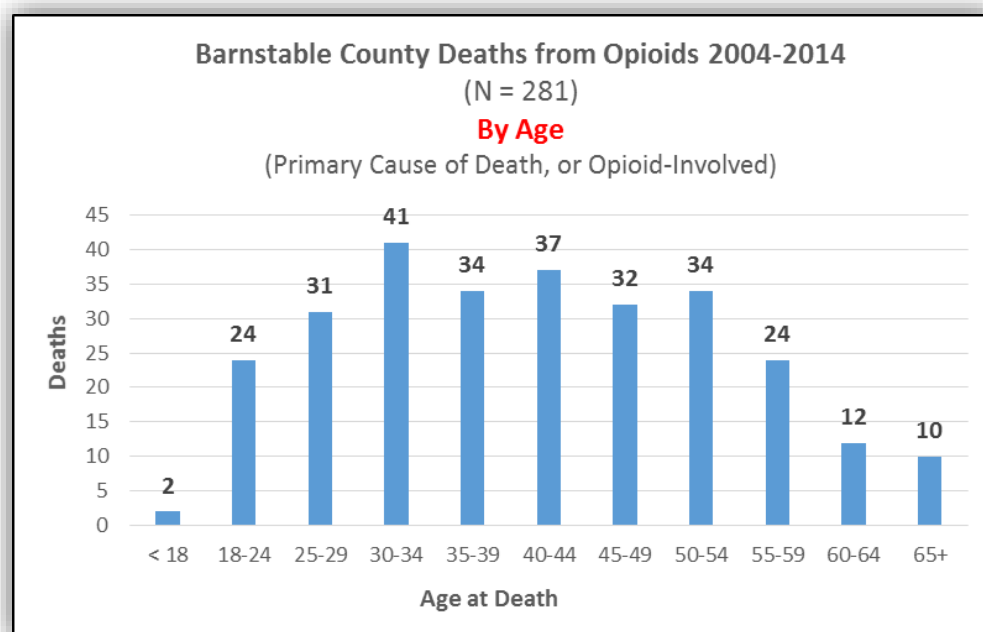


Figure 1 also indicate that 20% of the 281 deaths between the years 2004-2014 were among persons between ages 18-29. While this finding is not inconsistent with statewide opioid overdose death statistics by age it is highly significant in that this age group typically accounts for only 2% of all deaths in Massachusetts (MA DPH, 2017). Thus opioid deaths within this age bracket, statewide and in Barnstable County, are in gross disproportion to the age-adjusted expected death rate of 18-29 year olds.

- b. Deaths in the Trades and Service Industries, and Relative Risk.** Sixty-five percent (n=182 of 281) of all decedents were employed in the trades and service industries (includes “Homemaker” [n=17]),
- i. Among the trades/services decedents 81% (147 of 182) had a high school education or less,
 - ii. 58% were employed in the Construction, Building/Grounds Maintenance, and Repair occupations (when added together, highlighted in Table 1),
 - iii. The percentage of trades/services deaths among decedents employed in the Construction category (38%) greatly exceeded that occupation’s percentage in the County’s Trades/Services Workforce (14%) (US Census Bureau, 2017), see Table 1.
 - iv. Deaths in the trades/services by race also mirror that of Barnstable County’s population by race. Among all opioid-related decedents in the trades/services 93% (169) were classified as White-Alone, 5% (10) were Black, and less than 1% each were Native American (1), Asian (1), and White-Hispanic (1).

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Table 1. Opioid-Related Deaths among Decedents in the Trades and Service Industries, 2004-2014

Bureau of Labor Statistics Occupation Profiles	Opioid-Related Decedents in Trades/Services	% of Trades/Services Deaths	Occupation's % in the County Trades/Services Workforce*	Trades/Services Deaths: % with High School Education or Less
Construction	69	38%	14%	84%
Building/Grounds Cleaning & Maint.	22	12%	9%	82%
Food/Beverage Service	20	11%	12%	65%
Homemaker	17	9%	26%	88%
Installation/Maint./Repair	14	8%	6%	93%
Truck/Heavy Equip. Driver	10	5%	6%	100%
Healthcare Support	9	5%	5%	33%
Automotive or Boat Repair	8	4%	6%	100%
Fishing	5	3%	1%	80%
Hair/Nail Care	5	3%	7%	40%
Production	3	2%	5%	100%
Total, Trades/Services	182	100%		
Sources: Barnstable County Dept. of Human Services, and *Bureau of Labor Statistics. www.bls.gov/Oes/current/oes_stru.htm , accessed 8/30/2017				

Within the STW population persons employed in the Construction trades appear to be at particularly high risk of death from opioid-related overdose. Persons employed in the Construction trades represented 38% of decedents in the trade/service industries (n=182), and 25% of all decedents over the 10 year period (69 of 281). These percentages greatly exceeded that occupation's percentage of the Barnstable County's trades/services workforce (14%) and of the County's total adult workforce (all occupations) (7%) respectively (US Census Bureau, 2017).

Using a relative risk (RR) approach we calculate the following:

- Those working in the trades/services occupations during 2004-2014 were at more than **2 times greater risk** of dying from opioid overdose than were workers in other occupations (RR = 2.2).
- Those working in the construction trade in particular during 2004-2014 were at nearly **5 times greater risk** of dying from opioid overdose than were workers in other occupations (RR = 4.7).

County workforce data are presented in full in Appendix B and are summarized below in Table 2. In Table 2 the total working population of Barnstable County (estimated at 117,286 in 2015) and the occupational categories corresponding to the trades and service industries (estimated at 54,010 in 2015) are shaded.

Table 2. Occupation by Category for the Civilian Employed Population 16 Years and Over, 2011-2015

Occupation by Category for the Civilian Employed Pop., Age 16 +		
2011-2015 American Community Survey 5-Year Estimates		
	Total	% of Working Pop.
Civilian Employed Population, 16 years and over	102,995	
Add "Homemaker" (8% of Adult population of 178,639)	14,291	
Barnstable County "Working Population"	117,286	100%
<u>Management, business, science, and arts occupations:</u>	<u>38,119</u>	<u>33%</u>
<u>Sales and office occupations:</u>	<u>25,157</u>	<u>21%</u>
<u>Service occupations:</u>	<u>21,020</u>	<u>18%</u>
Healthcare support occupations	2,827	
Protective service occupations:	2,742	
Food prep. and serving	6,403	
Building and grounds clean. & maint.	5,129	
Personal care and service occupations	3,919	
<u>Homemaker</u>	<u>14,291</u>	<u>12%</u>
<u>Natural resources, construction, and maintenance occupations:</u>	<u>11,491</u>	<u>10%</u>
Farming, fishing, and forestry	511	
Construction and extraction	7,807	
Installation, maintenance, and repair	3,173	
<u>Production, transportation, and material moving occupations:</u>	<u>7,208</u>	<u>6%</u>
Production occupations	2,648	
Transportation occupations	3,137	
Material moving occupations	1,423	
<u>Employed in the Trades/Service Industries</u>	<u>54,010</u>	<u>46%</u>
		of Working Pop.

C.2. RESULTS: Focus Groups and Key Informant Interviews

To better understand the factors contributing to the impact of opioid-related deaths on the STW population Barnstable County conducted exploratory research via focus groups and key informant interviews in May and June of 2017.

C.2.a. Results: Focus Groups: Non-Traditional High School Students

All three focus groups conducted with non-traditional high school students yielded information that suggests that this sub-group would be highly receptive to courses and services that would ease their entry into the workforce upon graduation from high school and that they would benefit from specifically-crafted prevention and harm reduction approaches.

Group A: This group was held at a 4-year vocational technical high school. A total of 7 students participated (4 male, 3 female). All were aged 16-17 and were sophomores or juniors. Their majors included carpentry, plumbing, culinary, horticulture, health care technology, and marine technology. Nearly all participants had previously worked in the trades and services or were planning to do so that summer. For most, their coworkers were significantly older (middle-aged or older) and thus they did not socialize with them.

Group B: This group was held at a school that is designed to meet the needs of students who might otherwise not graduate high school. Students worked or interned during the day and took classes in the evening. A total of 8 students participated (6 male, 2 female). All were aged 17-19 and were juniors or about-to-graduate seniors. Nearly all participants had previously worked in the trades and services or were planning to do so during the upcoming summer. Most had multiple jobs and several reported socializing with each other and/or their coworkers.

Group C: This group was held at a district high school and the participants were members of programs designed for students with behavioral or health needs that put them at risk for not graduating high school. A total of 10 students participated; 3 were male and 7 were female. Students ranged in age from 14-17 years old and were in grades 9-11. They emphasized that they would prefer coursework that is “practical” and would build skills that they anticipated needing after high school. Only one of the participants stated an interest in obtaining additional formal education beyond high school.

C.2.b. Results: Key Informant Interviews: Harm Reduction Services Staff Serving Injection Drug Users

Given concerns about privacy, confidentiality, and stigma within the injection drug using community it was not possible to meet with current injection drug users. However, key informant interviews were conducted with three harm reduction services staff that serve current injection drug users (primarily, but not exclusively, users of opioids). Two interviews were at a recently-opened program in Falmouth, and was one at a long-standing program in Hyannis. These staff also conduct outreach in the community where use is occurring and report serving 450-500 non-duplicated clients per year and provide services to over 200 persons per month. They have access to hard-to-reach populations including sex workers, homeless and unstably housed individuals, and to workers in the trades and services industry.

Staff had great concern that the widespread adulteration of opioids with fentanyl has been driving the increase in opioid overdoses and that fentanyl adulteration is common, harder to detect, and easier to package. They reported that fentanyl is being pressed into pill and bar form to mimic prescription opioids and benzodiazepines and that fentanyl overdoses happen more quickly and the community needs to be advised on how to respond to these overdoses. These observations are supported by the findings of a recent CDC publication (Somerville, 2017)⁴ in which the characteristic of fentanyl overdose are specifically examined Barnstable, Bristol, and Plymouth counties in Massachusetts.

Staff observed that many of their clients are male, work in the trades or services, and work through their injuries by maintaining themselves on low-level doses of prescribed pain medications. After their doctors restrict their access to prescription opioids they began using heroin and other opioids obtained on the black market to manage their physical pain and to continue to work.

Staff emphasized that public dissemination and administration of Narcan has effectively spread the ability to revive an overdose victim beyond that of emergency responders and police. Many clients reported being revived or reviving others successfully with timely administration of Narcan. The recommended increasing access to concentrated 4 mg dosages of Narcan via harm reduction

⁴ Somerville, N. (2017). Characteristics of Fentanyl Overdose — Massachusetts, 2014–2016. CDC. Retrieved from <http://dx.doi.org/10.15585/mmwr.mm6614a2>.

programs, pharmacies, and doctor prescriptions. They also suggested that reducing access to single-stall public bathrooms may also deter individual opioid use and/or increase the likelihood of finding someone who is overdosing before they die. Using opioids alone, particularly in a locked bathroom, is a major risk factor for overdose.

Lastly, staff believed that expanding the number of harm reduction staff who are available to do follow up care with those who have overdosed, conduct trainings, and outreach to at-risk populations would be a wise investment and could have a direct impact on reducing the numbers of overdoses and deaths.

C.2.c. Results: Key Informant Interview: Member of the Trades/Service Industries (Local Lobsterman)

The County contacted the Cape Cod Commercial Fishermen's Alliance and was able to schedule an interview with a local commercial diver and fisherman from Eastham, MA. The respondent was a second-generation lobsterman, comes from a family of commercial fishermen, and works with his father. While he did not report experience using opioids, he commented on the impact of opioid use on the Cape and the fishing community during his decades in the trade. He knew several people in the fishing trade whose deaths were due to opioid use. He noted that employers may have a role to play in reducing overdoses and death and in supporting recovery and he provided valuable insight into the seasonality of work on Cape Cod and the potential effects of a cash economy upon substance misuse among seasonal workers.

Note that the authors recognize that additional qualitative research is needed (focus groups and key informant interviews) among trades and service workers in order to supplement the information obtained in the above interview. At the time the research team was in the field (late spring of 2017) they found it difficult to recruit a sufficient number of focus group participants and key informant interviews among both workers and employers due to the seasonal crush of work. The observations noted above are included in this report in order to set forth suggestive avenues for further inquiry among trades and service workers and their employers.

D. DISCUSSION

Reasons that trades/service people are experiencing disproportionate over-representation in the overdose death statistics may include:

- High rate of injury and pain in the physically taxing trades and service industries that may result in self-medication via opioid use and other substances.
- Physical and emotional isolation on the Cape, particularly during the winter season (“off-season”).
- Stigma associated with current or prior life events (e.g. history of substance use, history of incarceration) in combination with relatively low barriers to entry may cause people who can’t find work in other occupations to look to the trades and service industries for employment.
- Cultural acceptance of use of alcohol among people in the trades and service industries. Substance misuse is common and accepted. (“It’s hard to be the sober person on a crew”).

D.1. Discussion: Occupational Injury

An abundance of peer-reviewed findings suggest that elements such as social context, economic circumstances, and educational attainment are among the important determinants of a person’s health and well-being (Fielding, 2010). Unstable income can discourage healthy living, particularly among those who work in a seasonal industry where employment is short and temporary. Individuals must work constantly during the season to maximize their income and may not have the flexibility to take time off for illness and injury. Physical working conditions (e.g. exposure to hazardous chemicals and weather), physical demands (e.g. carrying heavy loads), and repetitive motions cause wear and tear on muscles and joints causing chronic pain. Exposure to physical injury on the job exhibits a strong social gradient, wherein the least skilled and lowest paid workers are at the greatest risk for injury. The occurrence of accidental occupational injury may be related to substance and opioid use (National Safety Council, 2015) (Massachusetts Coalition for Occup. Safety & Health, 2017). A lack of affordable employer-provided health insurance may affect how these workers manage their pain and self-medication may be a norm.

D.2. Discussion: Self-Medication

Statewide data indicate that opioid deaths in Barnstable County occur at rate that is in excess of the statewide rate (MA DPH Office of Vital Records, Aug. 2017).⁵ In addition to other potential factors, the seasonal nature of employment (and consequent off-season unemployment) among trade and service workers might be contributing to Cape Cod's opioid misuse problem.⁶ Coupled with easy access to prescription opioids (marketed between 1996 and 2002 as minimally addictive (Van Zee, 2009) and thereafter commonly prescribed) "people may have self-medicated and turned to opioids to deal with their problems" a respondent said. The current opioid epidemic follows a well-documented nationwide boom in prescriptions for opioid pain medication. It is likely that many of those currently using heroin and fentanyl started by using opioids prescribed to them or obtained from an acquaintance. What may have started as a means of dealing with an injury or emotional pain may have eventually lead to substance misuse.

D.3. Discussion: Isolation

In the interviews respondents observed that isolation is a problematic element of Cape Cod's social context and a potential contributor to substance misuse. One respondent described Cape Cod as an "insular island community" and physical and/or emotional isolation were descriptors that respondents used to describe life on Cape Cod. In addition, over 1/3 of participants in the youth focus groups saw their future success as depending upon whether or not they would be able to leave Cape Cod in the future. Many described Cape Cod as offering youth "nothing to do" or "no future".

⁵ For the years 2014 to 2016 Barnstable County's death rate from opioid-related overdose per 100,000 population was 26%, 24%, and 18% higher than the Massachusetts rate, respectively.

⁶ Recent research supports this connection between unemployment and opioid overdoses. Hollingsworth, A., Ruhm, C. J., & Simon, K. (2017). *Macroeconomic conditions and opioid abuse* (No. w23192). National Bureau of Economic Research.

D.4. Discussion: Stigma

The harm reduction staff interviewed reported that an important barrier to their clients seeking treatment and succeeding in recovery is the stigma associated with substance misuse disorder (“addiction”). They reported that their clients feel marginalized and stigmatized by the community. For example, a town on Cape Cod recently tried to shut down a program that provides syringe access to the community.⁷ The injection drug using clients in that town felt unwanted as a result—“the town didn’t want them to be seen, particularly by the tourists” who visit the Cape each summer, said one respondent.

Focus group participants in the program serving students with behavioral or other problems groups also mentioned stigma and discussed being labeled as troublemakers by their families, schools, and/or local law enforcement. They had limited trust in the system and in adults in general and appeared disengaged from their families, and from school, sports, work, and their community.

D.5. Discussion: Underlying Socio-Economic Factors

Among all participants and interviewees there was a perception that “the Cape is a great place to summer but a difficult place to live year round.” Many focus group participants did not seem to have much connection with or a sense of belonging to the broader Cape Cod community, nor did the clients reported upon by the harm reduction staff.

As previously noted, individuals who worked in the trades and service industries were disproportionally represented among opioid-related overdose deaths in Barnstable County (2004-

⁷ AIDS Support Group of Cape Cod, Inc. v. Town of Barnstable. Since 2009, AIDS Support Group of Cape Cod, Inc. (ASGCC) had been operating a free hypodermic needle access program in a village in Barnstable. The Town of Barnstable ordered the cessation of the program, asserting that ASGCC was in violation of Mass. Gen. Laws ch. 94C, 27 and Mass. Gen. Laws ch. 111, 215. In response to the Town’s cease and desist order, ASGCC filed an action seeking injunctive relief and a declaration that its non-sale needle access program was not statutorily prohibited. The superior court judge reported the question to the Appeals Court, and the Supreme Judicial Court allowed ASGCC’s application for direct appellate review. The court remanded the matter to the superior court for entry of a declaration that neither statute prohibits ASGCC from engaging in free distribution of hypodermic needles and an injunction permanently enjoining enforcement of the Town’s order to cease and desist, holding that the plain language of the statutes does not proscribe free distribution of hypodermic needs by a private individual or organization such as ASGCC that does not operate a program implemented by the Department of Public Health. Source: <http://law.justia.com/cases/massachusetts/supreme-court/2017/sjc-12224.html>

2014). Sixty-nine percent 69% of those who died from an opioid-related overdose had a high school education or less and that percentage increases to 81% among trades/service workers. This suggests that there are underlying social, environmental, and economic factors at work.

Additionally opioid deaths among persons 18-29 years of age, statewide and in Barnstable County, are in gross disproportion to the age-adjusted expected death rates of this group. Seventy-two percent (40) of the decedents in this age group (55) worked in the trades or service industries and nearly all of those workers (98%) had a high school education or less.

As such special attention must also be paid to those who go straight to work from high school. The STW population represents a sizeable at-risk group, about which the evidence base contains very little information. Much remains to be learned about young adult opioid initiation (age 18-24), particularly among the STW population.

E. PRELIMINARY RECOMMENDATIONS

The Barnstable County Department of Human Services offers preliminary recommendations to the RSAC; some can be acted upon now and others are recommendations for further inquiry. The evidence-based recommendations that can be acted upon now are intended to:

- Reduce the disproportionate number of opioid deaths on Cape Cod among workers in the trades and service industries by means of targeting interventions via their employers, and
- Increase the likelihood of professional success and preventing work-related harms among straight-to-work youth and young adults.

E.1. Actionable Now: Engage Employers and Employees

An employer's most important asset is his/her employees. Making the workplace healthier by increasing support services or creating organizational workplace health and safety policies benefits both the employer and the people who work there.

a. Employee Assistance Programs.

The Substance Abuse and Mental Health Service Administration (SAMSHA) has identified Employee Assistance Programs (EAPs) as an effective tool and an evidence-based practice to reduce substance use in the workplace (Massachusetts Legislature, 2016). EAPs may be able to help employees with personal problems that affect their job performance by identifying and addressing health, financial, and social issues, including mental health and/or substance use disorders. While some EAPs concentrate on alcohol, prescription drug and other drug issues, it is recommended that employers offer more comprehensive programs that include counseling and health promotion education. Interventions to target employees working in the trades/service industries are recommended. Additional work to examine the efficacy of EAP programs for this target population may be needed.

b. Peer-Based Program Interventions.

The workplace holds great promise as an under-utilized context combat substance misuse (Roman P. and Blum T., 2002). In Barnstable County, many who misuse substances are employed. Peer-based prevention and recovery programs have recently gained traction in Massachusetts, particularly among non-unionized trades, including laborers, construction workers, and fishermen. In the spring of 2017 the communities of Medford and Quincy introduced a peer-based prevention and health promotion model within the trades industries (City of Medford, 2017). Peer-based or coworker-based programs offer education, training, assistance, referrals and a sense of trust among those who are less likely to seek assistance for substance use disorder.

c. Apprenticeship Model.

Apprenticeships leading to industry recognized credentials are important options in career pathway systems (Alliance for Quality Career Pathways, 2014, p. 12). The apprenticeship model emphasizes the development of skills and the ability for workers to obtain higher levels of employment in an occupation or industry. The use of an apprenticeship model can provide communities with a competitive advantage by establishing a reliable source of qualified

workers for local employers and developing and sustaining this type of program requires a balance of interests between employers, apprentices, and the already existing workforce. Barnstable County's death record analysis shows that sixty-five percent of those who died from opioid-related overdose were employed in the trades and service industries, and 81% of those trades/services decedents had a high school education or less. Again, the straight-to-work population needs a strong transition from school to employment.

d. Workplace policy.

At a minimum a written policy describing the employer's expectations concerning substance use and the consequences of policy violations is recommended. Additionally, these policies should include:

- i. Standards that define and treat substance use as a chronic disease.
- ii. Prevention, treatment options, and follow-up care after returning to work.

e. Injury Prevention, Education, and Training.

Workplace injury and illness are preventable (US Dept. of Labor, 2017). Worker death statistics in Massachusetts in 2015-2016 show that the trade industries, particularly construction and landscaping, account for over forty percent of worker injury and fatality on the job (Massachusetts Coalition for Occup. Safety & Health, 2017). Employers are advised to implement safety education trainings for employees and to develop workplace policies that aim to reduce hazardous conditions and painful work-related injury.

The potential of workplace programs that are designed to prevent and reduce substance use-related problems is considerable. The workplace provides unique opportunities to influence those at risk of substance use or affected by related issues. Employers who engage young people via apprenticeships while they are still in school are also building a stronger transition from high school to work. Raising awareness among employees through tailored substance use messaging to prevent misuse and to educate about treatment should be coupled with developing and implementing work-based policies and programs.

E.2. Actionable Now: Increase Promotion and Dissemination of Narcan

a. Prescribe and/or Distribute Narcan to Patients with Opioid Prescriptions and to those in Treatment Programs

Narcan is a safe and effective medication that decreases opioid overdose morbidity and mortality. Its use by laypeople trained to identify and respond to overdose has been linked to reductions in overdose death rates. People who use opioids (whether prescribed or illegally obtained) are at greatest risk of overdose and should be encouraged and enabled to protect themselves and others by having Narcan with them at all times.

Any physician or dentist prescribing opioids and the relevant staff of treatment programs should also prescribe and/or distribute Narcan to patients. Opioid treatment programs should provide Narcan to their patients and educate them about its use. Pharmacists should offer Narcan to all customers for whom they are filling Schedule II opioid prescriptions, to customers purchasing syringes (without concurrent injectable medication), and to all customers filling co-prescriptions (within 30 days) of a benzodiazepine and any opioid medication.

b. Include of Narcan in Employers' Worksite Safety Strategies

Employers should be encouraged to include use of and access to Narcan at worksites.

- i. Adopt workplace policies and procedures that direct that Narcan be kept on-hand at worksites and that stipulate regular training of workers in its use.
- ii. Include Narcan in mandatory employee education and training (e.g. First Aid training).
- iii. Educate employees about their right to purchase Narcan without a prescription.
- iv. Review employer health plan benefits to determine whether or not purchase of Narcan is a covered benefit.

c. Promote the Good Samaritan Law

In 2012, the Massachusetts legislature passed a Good Samaritan law (allowing individuals who report an overdose to avoid criminal charges), and passed legislation to expand access to Narcan. Information about the Good Samaritan Law should be expanded to properly educate

the public on how to intervene during an overdose and to emphasize that overdose is a treatable medical emergency. Laws, policies, and communication strategies should continue to encourage and support rendering help in an overdose emergency.

In Massachusetts and on Cape Cod the distribution of Narcan has increased considerably during the past two years, primarily through First Responder Narcan Grants and Overdose Education and Narcan Distribution (OEND) at sites funded through the, Massachusetts Nasal Narcan Pilot Expansion (MA DPH Bureau of Substance Abuse Services, 2015). Policy makers intend that the greater availability of Narcan work in tandem with the encouragement of witnesses to administer it and to call 911 in response.

E.3. Actionable Now: Assist Youth and Young Adults Entering/In the Straight-To-Work Population

a. Improve Links to External Mental Health and Behavioral Services.

In March of 2016, the Massachusetts Legislature passed H.B. 4056 which outlined the requirements for public schools in the Commonwealth to engage in substance use prevention and education (Massachusetts Legislature, 2016). Adolescent Screening, Brief Intervention, and Referral to Treatment (SBIRT) focuses on prevention, early detection, risk assessment, brief counseling and referral intervention that can be utilized in the school setting. In follow up to SBIRT screenings the following measures are recommended:

- i. If internal school resources cannot fully address the screening results, schools should be enabled to refer students and families to mental health and financial assistance services quickly.
- ii. Students that are screened upon entering high school at grade 9 and who are identified as being at higher risk should receive on-going follow-up to ensure that they are receiving the supports and services needed.
- iii. Schools should develop policies and procedures to respond within the school's administrative, medical, and counseling structure(s) to students who are identified as high risk yet do not meet the criteria for treatment referral.

b. Take a Harm Reduction Approach.

It is recommended that the development and implementation of substance use programming directed at STW and/or at-risk youth be informed by evidence from appropriate harm reduction approaches and directly involve such youth in their design and implementation.

Youth substance use programming and educational strategies are frequently informed by prevention approaches that emphasize abstinence goals, yet these often do not resonate with young people due to the abstinence approach's lack of acknowledgment of their social context (Leslie, 2008). Approaches to drug misuse prevention have been critiqued as adopting a one-size-fits-all approach and therefore as being inadequate to address substance use in the context of population variation and inequities. This is particularly true among those that are considered to be at higher risk for substance misuse and among those going straight to work from school (Poulin, 2006).

c. Establish/Expand Career Pathways Programs.

Preparing students for and setting them on the path to employment that offers a living wage is an essential part of promoting their well-being and improving their likelihood of becoming independent adults. STW and/or at-risk youth need preparation for jobs that provide a livelihood and foundation from which they can pursue careers. The Career Pathways Model (Alliance for Quality Career Pathways, 2014) creates accessible pathways within the school structure that connects students to a source of income and advancement potential without costly up-front investments in education or training.⁸ The model includes three features: well-connected and transparent education, multiple entry points to training, and multiple exit points to employment (see Appendix C for details) (Alliance for Quality Career Pathways, 2014, p. 12).

The educational system in Barnstable County does offer vocational and technical training at two technical high schools, yet opportunities to develop skills for that are directly translatable

⁸ Massachusetts is one of 10 states leading the work to develop Career Pathways programming. Massachusetts-based liaisons to the Alliance for Quality Career Pathways are Marta E. Montleon, Diman Regional Vocational High School; Marybeth Campbell, Executive Offices of Education, Labor and Workforce Development and Housing and Economic Development; Rebekah Lashman, Susan Lange, and Theresa Rowland, Commonwealth Corporation.

to the trades/services workplace and/or that are important to functioning independently upon leaving high school should also be broadly available to students. Classes and programs which will prepare those who will immediately seek employment upon leaving high school are recommended. Additional support for these STW youth may include:

i. **Apprenticeships.**

Youth-serving organizations and workforce development agencies are sectors that can facilitate, develop and implement an apprenticeship model for straight-to-work populations. This approach can expand employers' ability to influence and train the younger cohort of incoming workers.

ii. **Coordinated workforce development resources.**

Youth-serving organizations should develop services that effectively connect higher risk and straight-to-work youth to employers by providing transportation, mentoring, counseling and assistance.

iii. **Financial literacy.**

Providing financial education and counseling services to help young people become better managers of their finances is recommended. These services can be tailored to meet specific apprenticeship and employment opportunities and will assist those who are transitioning from school to work.

The programs noted above have been shown to support healthy positive youth development in ways that promote positive outcomes by providing opportunities, fostering positive relationships, and furnishing the support needed to build on their leadership strengths (Raposa, 2013). A one-size-fits-all approach may not be effective when working with STW and/or at-risk youth. It is recommended that youth-serving community-based organizations develop a system to identify straight-to-work youth and incorporate a targeted approach to link these youth to appropriate programs. Services and supports should be tailored to meet the needs of the individual being served with the goal of successfully transitioning to the workforce and into adulthood.

Increasing the number of youth who make a successful transition to adulthood is not the sole responsibility of any single agency or professional group, rather it is a shared community value. Effective strategies require coordinated action at the individual, family, school, and community levels.

E.4. Further Inquiry Needed: Context of Trades and Service Workers

While this study's quantitative data are strongly indicative of the disproportionate risk of opioid-related death among trades and service workers we recommend that further inquiry take place into these workers' economic context, culture, and practices that have bearing on understanding the antecedents to substance misuse. In short, we still lack sufficient information to answer the following question:

- Why are trades/service workers dying at greater rates from opioid-related overdose than are workers in other occupational categories?

Additional information will provide insight into the reasons behind this phenomenon and will form the basis for targeting and evaluating interventions for this at-risk group. As noted in the Results section, the interview with the local lobsterman provided illustrative but insufficient insight into the context of trades and service workers.

E.5. Further Inquiry Needed: Further Define the STW Population

As mentioned in this study we conducted focus groups with three types of non-traditional high school students. However, it is important to note that we do not yet have sufficient information that would suggest treating them (for the purposes of policy and program intervention) as a homogenous subgroup from an educational and social point of view. As noted, Group A was comprised of vocational/technical high school students, Group B was comprised of high school students needing an alternative to regularly-scheduled daytime classes, and Group C was comprised of students in a program designed to serve their behavioral and/or health needs that put them at risk for not graduating high school. Assessing the differences in these students' educational content, professional aspirations, social context, and physical/behavioral/mental health will be important to understanding

the need for particular points of emphasis among the interventions mentioned in E.3. above. This suggests the following question:

- Is there a “gradient of risk” within the STW youth population that is associated with attendance at different types of high school programming that would allow useful categorization of these youth in terms of their educational context or high school curriculum? (Technical/vocational school, night school, GED classes, programs within high schools for high risk students, students leaving school without obtaining a diploma/GED).

Lastly, a focus group approach, by definition, does not offer a representative sample of the population being studied. We recommend that additional work be undertaken to count and further describe the three categories of non-traditional high school students on Cape Cod. School district sources show that the student populations of the two technical high schools on Cape Cod number between 650-700 students each (grades 9-12). However, we don’t not yet know the number and scope of other programs serving non-traditional high school students in the 10 school districts in Barnstable County, nor do we know the number of students working on their GED diplomas. This information will be important to understanding how to scale and deliver the interventions mentioned in section E.3. above.

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F. CONCLUSION

With this study the Barnstable County Department of Human Services presents preliminary recommendations to the Barnstable County Regional Substance Use Council (RSAC) to prevent and reduce the risk of opioid misuse and opioid-related deaths among two inter-related groups: STW youth/young adults and workers in the trades and service industries. Members of the STW population enter the workforce in the trades and services occupations in high numbers.

While Massachusetts has made strides in opioid education and prevention during the past five years⁹ local coordinated work is required to slow and reverse the rates of opioid misuse and overdose death on Cape Cod. Similar to statewide rates, opioid use and mortality from overdose has increased dramatically on Cape Cod since 2012. However, since at least 2014 Barnstable County's opioid-related overdose death rate (per 100,000 residents) has significantly exceeded that of Massachusetts'¹⁰ (MA DPH Office of Vital Records, Aug. 2017).

Based upon the findings of this study we conclude that persons employed in the trades and service industries on Cape Cod are at particular risk of death from opioid-related overdose. This population is characterized by educational attainment that does not exceed high school and by employment in the trades/service industries. Approximately 46% of Cape Cod's workforce (54,000 of 117,000) is employed in the trades/service industries (MA DPH Bureau of Substance Abuse Services, 2015), yet that sub-population experienced 65% of opioid-related deaths during the period 2004-2014.

Within this population persons employed in the construction occupational category appear to be at particularly high risk of death from opioid-related overdose--the percentage of decedents employed

⁹ In 2012, the Massachusetts legislature passed the Good Samaritan law and passed legislation to expand access to Narcan. In 2013, the MA DPH, Bureau of Substance Abuse Services (BSAS) awarded thirteen regional grants to prevent first use of opioids and overdose death. In 2014 Governor Deval Patrick declared a public health emergency, directing all first responders to be equipped with Narcan. In 2015 Governor Charlie Baker convened the first Opioid Working Group for Massachusetts, in 2016 the "State Without StigMA" public education campaign began, and "An Act Relative to Substance Use, Treatment, Education and Prevention" was signed into law.

¹⁰ Since 2014 Barnstable County's opioid-related overdose death rate (per 100,000 residents) has significantly exceeded that of Massachusetts and 26% higher in 2014, 24% higher in 2015, and 18% higher in 2016 than the state's death rate.

in the construction trades was greatly in excess of their representation in trades/service industries (38% vs. 14%) and in excess of their representation in the total workforce (25% vs. 7%).

The STW population feeds members into the trades and service industries and thus these teens and young adults have a higher probability of experiencing the harms associated with opioid misuse in this sector than do their peers entering other occupations. Further work is needed to better understand these risks and to mitigate them.

Next Steps

Review of these findings and preliminary recommendations by the RSAC, relevant agencies and employers, and members of the public is recommended, to be followed by the development of an action plan by the RSAC.

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Appendix A. Standard Certificate of Death, Commonwealth of Massachusetts

(INSTRUCTIONS ON REVERSE SIDE)

FOR USE BY
PHYSICIANS AND
MEDICAL EXAMINERS

The Commonwealth of Massachusetts
STANDARD CERTIFICATE OF DEATH
REGISTRY OF VITAL RECORDS AND STATISTICS

REGISTERED NUMBER _____ STATE USE ONLY _____

DECEDENT - NAME FIRST MIDDLE LAST

SEX _____ DATE OF DEATH (Mo., Day, Yr.) _____

1 PLACE OF DEATH (City/Town): _____ COUNTY OF DEATH _____ HOSPITAL OR OTHER INSTITUTION - Name (If not in either, give street and number) _____

4a PLACE OF DEATH (Check only one):
HOSPITAL: ☐ Inpatient ☐ ER/Outpatient ☐ DOA ☐ OTHER ☐ Nursing Home ☐ Residence ☐ Other (Specify) _____

5 WAS DECEDENT OF HISPANIC ORIGIN? (If yes, Specify Puerto Rican, Dominican, Cuban, etc.) ☐ NO ☐ YES

8a Specify: _____

8b RACE (e.g. White, Black, American Indian, etc.) (Specify) _____

9 DECEASED'S EDUCATION (Highest Grade Completed)
Elementary Sec (0-12) _____ College (1-4, 5+) _____

10 AGE - Last Birthday (Yrs.) _____

11 DATE OF BIRTH (Mo., Day, Yr.) _____

12 BIRTHPLACE (City and State or Foreign Country) _____

13 MARRIED, NEVER MARRIED, WIDOWED OR DIVORCED _____

14a USUAL OCCUPATION (Prior - If Retired) _____

14b KIND OF BUSINESS OR INDUSTRY _____

15a FATHER - FULL NAME _____

15b STATE OF BIRTH (If not in US, name country) _____

15c MOTHER - NAME (GIVEN) (MAIDEN) _____

15d STATE OF BIRTH (If not in the US, name country) _____

16 INFORMANT'S NAME _____

17 MAILING ADDRESS - NO. & ST., CITY/TOWN, STATE, ZIP CODE _____

18 RELATIONSHIP _____

20 21 22

23 METHOD OF IMMEDIATE DISPOSITION
☐ BURIAL ☐ CREMATION ☐ REMOVAL FROM STATE ☐ DONATION ☐ QTH. SPEC _____

24 FUNERAL SERVICE LICENSEE OR OTHER DESIGNEE _____

25 LICENSE # _____

26a DATE OF DISPOSITION (Mo., Day, Yr.) _____

26b NAME AND ADDRESS OF FACILITY OR OTHER DESIGNEE _____

27 28a/b

29 PART I - Enter the diseases, injuries, or complications that caused the death. Do not use only the mode of dying, such as cardiac or respiratory arrest, shock or heart failure. List only one cause on each line (a through d) PRINT OR TYPE LEGIBLY.

IMMEDIATE CAUSE (Final disease or condition resulting in death) → a. _____ DUE TO (OR AS A CONSEQUENCE OF) _____

Sequentially list conditions, if any, leading to immediate cause. Enter UNDERLYING CAUSE (disease or injury that initiated events resulting in death) LAST

b. _____ DUE TO (OR AS A CONSEQUENCE OF) _____

c. _____ DUE TO (OR AS A CONSEQUENCE OF) _____

d. _____

30 PART II - Other significant conditions contributing to death but not resulting in underlying cause given in Part I.

31 WAS AUTOPSY PERFORMED? (Yes or No) _____

32 WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH? (Yes or No) _____

33 MED. EXAM. NOTIFIED? (Yes or No) _____

34 MANNER OF DEATH
☐ NATURAL ☐ HOMICIDE ☐ COULD NOT BE DETERMINED
☐ ACCIDENT ☐ SUICIDE ☐ PENDING INVESTIGATION

35a DATE OF INJURY (Mo., Day, Yr.) _____

35b TIME OF INJURY _____

35c INJURY AT WORK (Yes or No) _____

36 DESCRIBE HOW INJURY OCCURRED _____

36a PLACE OF INJURY (At home, farm, street, factory, office bldg., etc.) Specify _____

36b LOCATION (No. & St., City/Town, State) _____

36c 36d

36e To be Completed by PHYSICIAN ONLY
36a To the best of my knowledge, death occurred at the time, date, and place and due to the cause(s) stated.
(Signature and Title)
DATE SIGNED (Mo., Day, Yr.) _____ HOUR OF DEATH _____
36b NAME OF ATTENDING PHYSICIAN IF NOT CERTIFIER _____
36c 36d

36e To be Completed by MEDICAL EXAMINER ONLY
37a On the basis of examination and/or investigation in my opinion death occurred at the time, date, and place and due to the cause(s) stated.
(Signature and Title)
DATE SIGNED (Mo., Day, Yr.) _____ HOUR OF DEATH _____
37b PRONOUNCED DEAD (Mo., Day, Yr.) _____
37c PRONOUNCED DEAD (Hr) _____
37d 37e

37f NAME AND ADDRESS OF CERTIFYING PHYSICIAN OR MEDICAL EXAMINER (Type or Print) _____

37f LICENSE NO. OF CERTIFIER _____

38 WAS THERE A PRONOUNCEMENT FORM? (Yes or No) _____

39 IF YES, DATE PRONOUNCED _____

39 IF YES, TIME PRONOUNCED _____

40a NAME OF PRONOUNCER _____

40b 40c

40d DATE BURIAL PERMIT ISSUED _____

40e RECEIVED IN THE CITY/TOWN OF _____

40f DATE OF RECORD _____

40g SIGNATURE-BD. OF HEALTH AGENT _____

40h CLERK'S SIGNATURE _____

40i 40j

PERMANENT BLACK INK ONLY

R-301-01

**Appendix B. Occupation by Gender for the Civilian Employed Population 16 Years and Over,
2011-2015 American Community Survey 5-Year Estimates for Barnstable County, MA**

Occupation by Gender for the Civilian Employed Population, Age 16 Years and Over						
2011-2015 American Community Survey 5-Year Estimates						
			Barnstable County, ACS Estimate 2015			
	Total	Percent of Working Population	Male	Percent Male	Female	Percent Female
Civilian Employed Population, 16 years and over	102,995		51,839	50.30%	51,156	49.70%
Add Homemaker (8% of Adult population of 178,639)	14,291		Data pending			
Barnstable County "Working Population"	117,286	100%				
Management, business, science, and arts occupations:	38,119	33%	16,513	43.30%	21,606	56.70%
Management, business, and financial occupations:	15,133		8,250	54.50%	6,883	45.50%
Management occupations	11,115		6,399	57.60%	4,716	42.40%
Business and financial operations occupations	4,018		1,851	46.10%	2,167	53.90%
Computer, engineering, and science occupations:	3,967		2,698	68.00%	1,269	32.00%
Computer and mathematical occupations	1,471		1,067	72.50%	404	27.50%
Architecture and engineering occupations	1,026		946	92.20%	80	7.80%
Life, physical, and social science occupations	1,470		685	46.60%	785	53.40%
Education, legal, community service, arts, and media occupations:	12,648		4,334	34.30%	8,314	65.70%
Community and social services occupations	2,379		757	31.80%	1,622	68.20%
Legal occupations	1,254		720	57.40%	534	42.60%
Education, training, and library occupations	6,509		1,766	27.10%	4,743	72.90%
Arts, design, entertainment, sports, and media occupations	2,506		1,091	43.50%	1,415	56.50%
Healthcare practitioner and technical occupations:	6,371		1,231	19.30%	5,140	80.70%
Health diagnosing and treating practitioners and other technical occupations	4,967		988	19.90%	3,979	80.10%
Health technologists and technicians	1,404		243	17.30%	1,161	82.70%
Sales and office occupations:	25,157	21%	8,922	35.50%	16,235	64.50%
Sales and related occupations	12,471		5,989	48.00%	6,482	52.00%
Office and administrative support occupations	12,686		2,933	23.10%	9,753	76.90%
Service occupations:	21,020	18%	9,750	46.40%	11,270	53.60%
Healthcare support occupations	2,827		213	7.50%	2,614	92.50%
Protective service occupations:	2,742		2,245	81.90%	497	18.10%
Fire fighting and prevention, and other protective service workers including supervisors	1,589		1,261	79.40%	328	20.60%
Law enforcement workers including supervisors	1,153		984	85.30%	169	14.70%
Food preparation and serving related occupations	6,403		2,924	45.70%	3,479	54.30%
Building and grounds cleaning and maintenance occupations	5,129		3,317	64.70%	1,812	35.30%
Personal care and service occupations	3,919		1,051	26.80%	2,868	73.20%
Natural resources, construction, and maintenance occupations:	11,491	10%	11,137	96.90%	354	3.10%
Farming, fishing, and forestry occupations	511		371	72.60%	140	27.40%
Construction and extraction occupations	7,807		7,689	98.50%	118	1.50%
Installation, maintenance, and repair occupations	3,173		3,077	97.00%	96	3.00%
Production, transportation, and material moving occupations:	7,208	6%	5,517	76.50%	1,691	23.50%
Production occupations	2,648		1,898	71.70%	750	28.30%
Transportation occupations	3,137		2,637	84.10%	500	15.90%
Material moving occupations	1,423		982	69.00%	441	31.00%
"Homemaker" (8% of Adult Population of 178,639)	14,291	12%	Data pending			
Employed in the Trades and Service Industries	54,010	46%	of Working Population			

Source: <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>. Additional analysis of "Homemaker" occupation by V. Harik

Appendix C. Career Pathway Approach Definitions and Conceptual Model

SHARED VISION, STRONG SYSTEMS: The Alliance for Quality Career Pathways Framework Version 1.0

Section II: Definitions and Conceptual Model

The **career pathway approach** connects progressive levels of education, training, support services, and credentials for specific occupations in a way that optimizes the progress and success of individuals with varying levels of abilities and needs. This approach helps individuals earn marketable credentials, engage in further education and employment, and achieve economic success. Career pathways deeply engage employers and help meet their workforce needs; they also help states and communities strengthen their workforces and economies.⁴

This approach is not simply a new model; it is a systems-transformation strategy.⁴

The career pathway approach can benefit a wide variety of participants including those who are younger or older, traditional or nontraditional, and on an academic or career and technical path. Career and technical education (CTE) programs of study, including those that lead to industry recognized credentials, are a critical component of career pathway systems, along with pathways serving lower-skilled adults, high school students, disconnected or “opportunity” youth, veterans, incumbent workers, and other targeted populations. Apprenticeships leading to industry recognized credentials also are important options in career pathway systems. State and local/regional partners, including employers, may want to think about framing their diverse career pathway efforts as a “suite” operating within one career pathway system.

The framework of system-building criteria and career pathway participant metrics proposed here is most applicable to the types of career pathway systems, pathways, and programs focused on adults and out-of-school youth in occupational career pathways. However, many of the criteria, indicators, and metrics could be applicable to those for other populations, such as secondary and postsecondary career and technical education students. We encourage education, workforce, and employer partners to think holistically

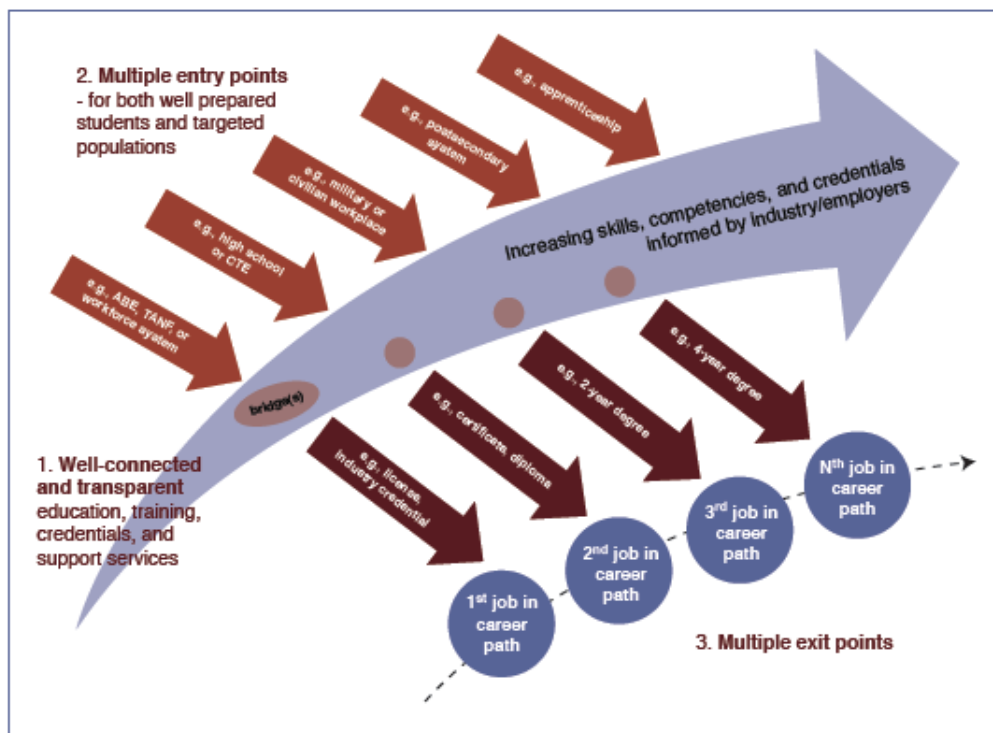
about their career pathway efforts and develop cohesive systems to support them.

Career pathways operationalize the career pathway approach and include three *features* (see figure 2 and text box 2):

1. **Well-connected and transparent education, training, support services, and credentials** within specific sectors or cross-sector occupations (often delivered via multiple linked and aligned programs);^{ix}
2. **Multiple entry points** that enable well-prepared students as well as targeted populations with limited education, skills, English, and work experiences to successfully enter the career pathway. Targeted populations served by career pathways may include adult education or other lower-skilled adult students; English language learners; offenders or ex-offenders; certain high school students; disconnected or “opportunity” youth; some former military personnel; un- or under-employed adults; or others.
3. **Multiple exit points** at successively higher levels leading to self- or family-supporting employment and aligned with subsequent entry points.

⁴ Career pathway partnerships may want to follow this definition with more information on their specific career pathways efforts and initiatives.

Figure 2: Three Essential Features of Career Pathways



For example, South Central College, a community and technical college in Minnesota, and its partners have built a set of health care career pathways that offers multiple entry points for different types of participants including lower skilled adults entering through a Minnesota FastTRAC bridge program, high school students entering through career and technical education, and traditional college students entering through the traditional college door. College and career navigation services are available for participants, and support services are tailored to individual needs. Partnerships with Workforce Investment Act Vocational Rehabilitation, Adult, and Youth program partners as well as Adult Basic Education ensure that academic and personal supports are part of the pathway for participants who need them. The pathway connects a variety of health care credentials to fit the lives of busy working parents or younger, more traditional students. Employment placement and retention services help participants who want to enter the workforce after obtaining the initial Nursing Assistant credential as well as participants who continue into longer programs. All credits and certificates count toward the next credential in the pathway, allowing participants who “stop out” for

work to come back onto the pathway with all their prior accomplishments recognized.

The purpose of aligning the offerings, entry points, and exit points in career pathways is to facilitate participants’ transitions through the pathway until they meet their goals, which generally are to get a good job and earn more money.* Participants may stop out of the career pathway at certain milestone points, i.e., after earning a credential, similar to traditional students stopping out between earning an undergraduate degree and a master’s or professional degree. Ideally, career pathway system partners have implemented various strategies and tools e.g., academic advising and supports, career navigation, and support services, to help participants continue along the pathway when they are ready.

Sometimes, the term “stackable credentials” is used interchangeably with “career pathways.” However, they are not the same. The U.S. Department of Labor and the Alliance for Quality Career Pathways define a stackable credential as “part of a sequence of credentials that can be accumulated over time to build individuals’ qualifications and help them move

along a career pathway up a career ladder to different and potentially higher paying jobs” (see glossary). Therefore, stackable credentials corresponds to just the first feature of a career pathway described above (well-connected offerings). Career pathways are more extensive and comprehensive efforts. Stackable credentials that are part of a quality career pathway system should be informed by labor market information and demonstrate evidence that they are valuable to employers and participants.

All three *features* of career pathways correspond to career and technical education programs of study. Although the statutory definition of programs of study in the Carl D. Perkins Career and Technical Education Act of 2006 (see glossary) focuses on the first essential feature of career pathways in the AQCP definition—well-connected education, training, etc.—as implemented, many of the more comprehensive programs of study also include and integrate the four essential career pathway *functions* described below. Career pathways and any linked and aligned programs that are part of the career pathway include four essential *functions*:ⁱⁱ

1. Participant-focused education and training;
2. Consistent and non-duplicative assessments of participants’ education, skills, and assets/needs;
3. Support services and career navigation assistance to facilitate transitions; and
4. Employment services and work experiences.

Examples of each of these four functions can include:

Participant-focused education and training:

- contextualized curriculum and instruction
- redesigned and accelerated remedial education^{xii}
- GED-to-college bridge programs^{xiii}
- integrated or concurrent education and training^{xiv}
- learning communities^{xv}
- chunked or modularized curriculum and instruction
- competency-based curriculum^{xvi}
- self-paced instruction (may also be “guided” self-paced)
- technology-enabled, online, and/or hybrid instruction

Text Box 2: Career Pathway and Program Features and Functions

Essential features of quality career pathways include:

1. **Well-connected and transparent education, training, credentialing, and support service offerings** (often delivered via multiple linked and aligned programs);
2. **Multiple entry points** that enable well-prepared students as well as targeted populations with limited education, skills, English, and work experiences to successfully enter the career pathway; and
3. **Multiple exit points** at successively higher levels leading to self- or family-supporting employment and aligned with subsequent entry points.

Essential functions in quality career pathways and programs include:

1. Participant-focused education and training;
2. Consistent and non-duplicative assessments of participants’ education, skills, and assets/needs;
3. Support services and career navigation assistance to facilitate transitions; and
4. Employment services and work experiences.

- education and training offered at times and places and in formats that work for the targeted population—including non-semester-based schedules, block schedules, evening/weekend schedules, and employer-based education

Support services:^{xvii}

- child care
- transportation assistance
- housing assistance
- mental health and counseling
- personal success skill development, such as reasoning, task flexibility, problem solving, planning, and execution skills

- workplace skills, such as understanding workplace etiquette, working in teams, etc.
- academic advising and supports (academic advisors, tutoring, learning communities, etc.)
- digital literacy skills
- leadership development for youth-focused pathways and programs
- citizen development for some pathway programs for youth and immigrants

Career navigation assistance:

- career exploration
- career coaching
- career navigation assistance

Employment services:

- assistance with resume writing
- mock interviews
- jobs fairs
- assistance finding employment

Work experiences:

- work simulations
- job shadowing
- on-the-job-training
- internships
- transitional jobs

Career pathways are diverse in the specific combinations of services they include and in the intensity of the service levels. In fact, one of the strengths of the career pathway approach is that the pathways are customized to the targeted industry, target population, and the local partners and context. That said, all career pathways and any linked and aligned programs should have at least some level of each of the features and functions described above.

The Alliance acknowledges that funding is limited to provide all four functions in an integrated comprehensive manner and not all career pathway participants will require a full measure of all of the functions. However, experience on the ground demonstrates that successful efforts creatively leverage resources from multiple partners—including sometimes from the participants themselves, i.e., peer

Figure 3: Four Essential Functions of Career Pathways and Programs



tutoring, carpools, etc.—to deliver the four essential functions of career pathways.

Career pathways and programs also vary in their length and number of credentials participants can earn. Career pathways include programs built within existing education systems (e.g., high school career and technical education, community colleges) but also include new programs built for disconnected youth or lower-skilled adults, such as bridge programs.⁵

A **career pathway system** is the cohesive combination of partnerships, resources and funding, policies, data, and shared accountability measures that support the development, quality, scaling and “dynamic sustainability” of career pathways and programs for youth and adults (see glossary for definitions of terms). A career pathway system is an overarching frame and is not couched within any one public education,

⁵ For more information on career pathway bridge programs, see *Beyond Basic Skills*, by Marcie Foster, Julie Strawn, and Amy Ellen Duke-Benfield, CLASP, 2011 and *Farther Faster*, by Julie Strawn, CLASP, 2011.

workforce, or other system; however, one system may take the lead on developing the career pathway partnership. The value of a career pathway system is that it connects and aligns all other related public systems to each other and to private and non-profit partners. A career pathway system is not simply a short- or medium-term partnership assembled for the purposes of an initiative; however, these temporal partnerships can contribute to system building.

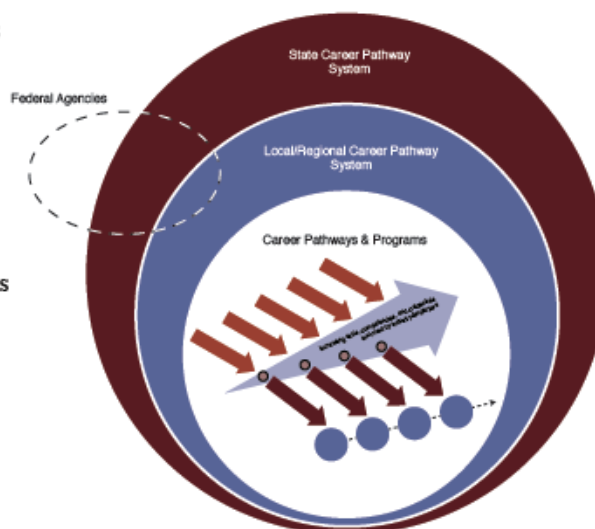
Career pathways and programs are the “heart” of career pathway systems and are, ideally, supported by an aligned and integrated local/regional career pathway system (see figure 4). The most efficient local/regional systems will build a few comprehensive career pathways within regional in-demand sectors and create multiple entry points to these pathways for various populations as well as provide the necessary services and supports to help individuals succeed. Ideally, a career pathway system should try to build one career pathway or a set of interrelated career pathways within each targeted industry sector and provide multiple entry points and customized career pathway functions for various types of individuals to succeed in the pathway. This would reflect a truly aligned, shared, and efficient system.

Ideally, a strong state career pathway system supports local/regional systems. A feedback loop between the state system, the local/regional system, and the federal agencies is important for ensuring that each learns from the other and mutually reinforces one another. For example, career pathway efforts have struggled with the poor alignment of federal performance measures between education and workforce programming, the lack of shared definitions for common performance accountability terms used across systems, a disconnected set of performance reporting periods, and other barriers to partners working collaboratively on a shared vision and strategy.

Other federal policies or lack thereof also pose barriers. For example, the absence of federal guidance clarifying that career pathway students in aid-eligible programs are eligible for student financial aid has stymied the development of aid-eligible career pathways. Also, the elimination of federal financial aid for students who do not have a high school diploma or equivalent but can prove their ability to benefit from college poses a barrier.

On the other hand, federal guidance and investments can and have been supportive of career pathways. For example, federal discretionary grant programs have provided opportunities for states and local regions to build and scale career pathways; the Office of Career, Technical, and Adult Education has issued clear guidance on how to use adult education funds for integrated education and training; and both the departments of labor and education have provided technical assistance on building career pathway systems, pathways, and programs. Similarly, state policies and practices can have a supportive or a dampening effect on career pathways.

Figure 4: Career Pathway Systems, Pathways, and Programs





Analysis of Opioid-Related Overdose Deaths on Cape Cod, 2004-2014: Implications for Trades/Service Workers and the Straight-To-Work Population

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