Maine Cancer Foundation – 2021 Grantmaking Outcome Evaluation Report

June 2022

Acknowledgements

The analysis and report were sponsored by Maine Cancer Foundation (MCF).

To measure the outcomes and impact of Maine Cancer Foundation's grantmaking.

We would like to thank all the Maine Cancer Foundation grantees who provided information and data related to the grants so that outcomes could be calculated for this report.

The report was prepared by the research team at Market Decisions Research of Portland, Maine (www.marketdecisions.com).

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Background

Maine Cancer Foundation's mission is to reduce the incidence and mortality of cancer in Maine, and that is accomplished through grant-based financial support and coalition building. Feedback from cancer stakeholders across the state and ongoing evaluation of MCF's own efforts have led the organization to focus its grantmaking on the following three pillars: cancer prevention, early detection and screening, and improving patient outcomes. Since 2015, targeted grantmaking in these three categories include:

- Cancer Screening (including Breast, Cervical, Colorectal, Lung, Skin)
- Genetic Screening
- HPV Vaccinations
- Patient Navigation
- Tobacco Prevention
- Transportation & Lodging
- Sun Safety
- General Operation Support Funding

Maine Cancer Foundation funds projects using evidence-based approaches to cancer prevention that will directly and positively affect the rate of cancer screenings, and/or improve and expedite the treatment process for cancer patients in Maine. Given the time it takes to coordinate and implement grant projects and see lasting change, most MCF grants are funded for multiple years.

This outcome analysis and evaluation conducted by Market Decisions Research examines MCF's grant-making activities on an annual basis. The goal of the outcome evaluation is to quantify the short and longer-term outcomes and cost-effectiveness of MCF grant funding.

To accomplish this, MDR used information and data previously reported by grantees as part of their initial grant evaluation. The MDR team also collected new data from MCF grantees to fill in gaps and quantify outcomes. MDR worked closely with MCF to refine and develop outcome metrics for each grant area, review the information already collected and identify where gaps exists, collect additional data needed to calculate outcomes, and conduct an outcome and cost-effectiveness analysis (where possible). The results of this effort are presented in this report.

Please note that the data and results presented in this report represent a point in time estimate that covers the period of MCF grants from 2015 to December 2021. Due to the nature of how MCF awards grants and the fact that many projects are still ongoing, more recent grant funding, activities and outcomes may not be captured in the 2021 reporting cycle.

Executive Summary

As of December 2021, Maine Cancer Foundation has funded 201 grants, a total of $12,032,110 dollars, to address cancer incidence and mortality in the state of Maine. MCF has funded grants in the areas of transportation and lodging, patient navigation, tobacco, colorectal cancer screening, lung cancer screening, general operations, HPV vaccination, sun safety, and research. Across these topics, grantees focused on improving patient outcomes, improving screening rates, and preventative cancer incidence. Each grant emphasized several specific areas of improvement including collaboration, awareness, infrastructure, training, and capacity, and expanding access to care.

Grantees are leveraging MCF funds to effect significant changes in Maine's cancer population and those at risk of developing cancer.

- Patient screening rates for colorectal and lung cancer have increased among grantees working to address these topics.
- Patient navigators connected a significant number of patients with resources and worked to increase referral conversions and follow-ups for cancer screening.
- HPV vaccination rates rose significantly among children at participating pediatric practices.
- Tobacco grantees reported a significant number of tobacco users quit or reduced their tobacco use after attending grant-funded programs.
- General operations funding increased organization capacity and has enabled grantees to generate additional funds through grants and fundraising.
- MCF funding allowed Maine's largest lung cancer network to grow into a stakeholder coalition addressing patient access, provider education, and improvements in screening and lung cancer care.
- A youth tobacco prevention media campaign was conducted, strategically reaching Maine youth via digital media platforms with information on the dangers and effects of smoking as well as tobacco companies' manipulative marketing tactics.
- Several grantees worked to provide sun safety education and supply much-needed sunscreen to high-risk populations across the state.
- Hospice grantees expanded their services and streamlined their operations to serve more clients each year.

Overall, organizations funded by Maine Cancer Foundation's grants have dramatically impacted the cancer prevention, detection, and patient support efforts in Maine. Funding distributed to date has brought novel screening and care to practices across the state while expanding access to vulnerable populations, including those with limited resources and those at high risk of developing cancer. Each grant category has fulfilled its aim to increase screening, improve outcomes, and prevent future cases of cancer. Funding from MCF has enabled grantees to achieve a considerable amount of progress in the areas of cancer prevention, screening, and improving patient outcomes in Maine.

Key Findings

Note: Data represented in key findings represent the percentage of grants where data are available either from the evaluation forms provided to MCF by the grantees or from follow-up requests made by the MDR team.

Cancer Screening

Colorectal Cancer

- Maine Cancer Foundation has awarded 25 colorectal cancer screening grants totaling $1,731,102.
- A total of 37 new staff members (across 15 organizations) were hired as a result of the grants.
- MCF grants have resulted in 12,872 additional CRC screenings (mostly commonly colonoscopies or FOBT/FITs), resulting in an estimated 1,761 life years saved and 158 fewer cancer deaths.

Lung Cancer

- Maine Cancer Foundation has awarded 7 lung cancer grant totaling $663,249.
- This has resulted in 3,804 patients identified for lung cancer screening, 2,438 patients receiving low-dose CT scans, and the identification of 31 new lung cancer cases.

Transportation

- Maine Cancer Foundation has awarded 57 transportation grants totaling $1,846,496.
- This has helped thousands of Mainers travel to cancer care appointments, resulting in 39,810 additional rides and a total of 3,867,881 miles traveled.

Patient Navigation

- To help increase Maine patients' access to cancer care, Maine Cancer Foundation awarded 16 patient navigation grants totaling $2,455,848.
- This has resulted in 21,218 patients being newly identified for screening, 5,442 additional referrals provided for diagnostic follow-ups, and over a thousand patients have been referred to cancer care resources by patient navigators.

HPV Vaccination

- Maine Cancer Foundation has awarded 2 HPV vaccination grants totaling $356,117.
- This has resulted in 698 additional HPV vaccinations, roughly 25% of the eligible population.

Tobacco Prevention and Cessation

- Maine Cancer Foundation has awarded 25 tobacco grants totaling $2,356,473

- This has resulted in over 15,747 individuals receiving tobacco prevention education, in addition to over 3,507 individuals who were referred to tobacco cessation services, resulting in 492 confirmed quits or persons reducing their tobacco use.
- In partnership with the Maine Centers for Disease Control and Prevention and Rinck Advertising, Maine Cancer Foundation invested $750,000 over three years to a statewide youth tobacco media campaign.
    - Maine youth were provided education around tobacco company marketing tactics, the dangers and effects of tobacco use, and empowered youth to reject the manipulative tactics used by the tobacco companies.
    - Nearly half of teens reporting seeing a "You Are the Target" campaign ad or video. 25% of youth/young adult tobacco users quit or thought about quitting as a result of the campaign.

Sun Safety

- Maine Cancer Foundation has awarded 6 sun safety grants totaling $183,193.
- This has resulted in over 5,000 individuals receiving education on sun safety, the installation of 186 sunscreen dispensers, and 166,714 individuals receiving at least one 1ml application of sunscreen at a cost of $0.15 per person.

General Operating Support

- Maine Cancer Foundation has awarded 11 general operating support grants totaling $380,000.
- General operations funding has increased organization capacity, allowed for restructuring and greater focus on programs, and has enabled grantees to generate additional funds through grants and fundraising.

Cancer Research

- Maine Cancer Foundation has awarded 4 research grants totaling $1,050,784.
- This funded no-cost fluid and tissue access for researchers, a successful PCRI shared decision-making program for lung screening, a telemedicine program, ongoing EHR database consolidation, and a breast cancer diagnostic trial.

Hospice General Operating Funds

- Maine Cancer Foundation has awarded 12 hospice general operations grants totaling $108,819.
- Hospice grantees expanded their services to more clients, increased marketing and education efforts, hired and trained more volunteers, and developed self-sustaining funding streams.

Genetic Screening

- One genetic screening grant has been awarded totaling $199,891.
- To date, more than 90% of Maine medical oncologists have enrolled in the initiative from all Maine cancer practices.

1. Cancer Screening

1A. Colorectal Cancer Screening

Background

Colorectal cancer (CRC) is one of the most commonly diagnosed cancers in Maine. The age-adjusted CRC rate of 36.3 per 100,000 population makes it the third most diagnosed cancer in Maine[2]. It is also the third most likely cause of cancer death in the state, resulting in over 200 deaths per year. Maine's CRC rate is like that of the U.S. (36.9), and it is cancer that impacts both males and females at similar rates.

Maine Cancer Foundation has awarded 25 **colorectal cancer screening grants** totaling **$1,731,102**.

This has resulted in **12,872** additional CRC screenings, resulting in **1,761** life years saved and **158** fewer cancer deaths.

Studies have shown that colorectal cancer screening reduces mortality by preventing and detecting the disease early, thus increasing the likelihood of survival. Regular CRC screening can help to identify and treat colorectal polyps before they have the chance to become cancerous. Screening can also find colorectal cancer early when it's small and easier to treat.

The U.S. Preventative Services Task Force recommends screening for colorectal cancer starting at age 45 and continuing until age 75. People at increased or high risk of colorectal cancer might need to start colorectal cancer screening earlier, be screened more often, and/or get specific tests. For complete information about colorectal cancer screenings, please visit the U.S. Preventative Services Task Force.[7]

Summary of MCF Grants 2015-2021

Since 2015, the Maine Cancer Foundation has made significant investments in organizations around Maine with the goal of improving colorectal cancer screening rates. These organizations have implemented evidenced-based interventions, such as Electronic Health Record (EHR) systems that track and coordinate provider and patient screening reminders, that have been shown to increase CRC screening rates[4]. Many of these projects also included components to provide education, increase awareness, and increase access for individuals who have difficulty obtaining care.

From 2015-2021, Maine Cancer Foundation has awarded $1,731,102 through 25 colorectal cancer screening grants to 19 organizations, including:

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Cary Medical Center	Screen Aroostook	2018	$98,516	CRC Screening	Caribou	ME
City of Portland, Minority Health Program	Colorectal Cancer Screening for Vulnerable Populations	2017	$100,000	CRC Screening	Portland	ME

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Harrington Family Health Center	Increase Colorectal Screening through the reduction in FIT Test Barriers and Increased Community Education	2019	$100,000	CRC Screening	Harrington	ME
Healthy Acadia	Downeast Colorectal Cancer Screening Initiative	2019	$100,000	CRC Screening	Machias	ME
Healthy Androscoggin	Colon Health Rx: Cancer Screening in Lewiston's Immigrant Community	2018	$93,051	CRC Screening	Lewiston	ME
Healthy Community Coalition of Greater Franklin County	One-by-One-Colorectal Cancer Screening and Navigation	2017	$99,832	CRC Screening	Farmington	ME
Islands Community Medical Services	Increasing Cancer Screenings at ICMS	2020	$100,000	CRC Screening	Vinalhaven	ME
LincolnHealth	Strategy for Identification and Screening of Unscreened Patients at LincolnHealth	2016	$29,235	CRC Screening	Damariscotta	ME
Maine Access Immigrant Network	Colorectal Cancer Prevention and Screening Outreach and Education in MAIN's Communities	2019	$45,906	CRC Screening	Portland	ME
Maine Primary Care Association	Colorectal Cancer Screening Project	2021	$20,000	CRC Screening	Augusta	ME
MaineGeneral Medical Center	Expansion of the Role of Community Health Workers to Increase Colon Cancer Screening Rates	2016	$29,937	CRC Screening	Waterville	ME
MaineGeneral Medical Center	80% Colon Cancer Screening Project	2017	$99,627	CRC Screening	Waterville	ME
MaineGeneral Medical Center	Mobilizing CHWs to increase access for high-risk patients due for surveillance colonoscopy screening	2019	$96,629	CRC Screening	Augusta	ME
MaineHealth – Maine Medical Center	Building Capacity at MaineHealth to Enhance Colorectal Cancer Screening	2016	$28,863	CRC Screening	Scarborough	ME

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
MaineHealth DBA Maine Medical Center	Cancer Genetic ECHO: Extending Genetic Services to Maine's Colorectal Cancer Patients and their At-Risk Family Members	2020	$89,055	CRC Screening	Portland	ME
Midcoast Hospital	Developing Systems to Increase Colorectal Screening Rates through Patient Identification	2016	$29,848	CRC Screening	Brunswick	ME
Mount Desert Island Hospital	Increase Colorectal Screenings and Ensure Compliance in a Targeted Subset of Patients	2016	$7,481	CRC Screening	Bar Harbor	ME
Northern Light A.R. Gould Hospital	Removing Stigma and Barriers: Increasing Colorectal Screenings in Aroostook County	2020	$70,710	CRC Screening	Presque Isle	ME
Pen Bay Medical Center	Screen to Save - Knox County	2018	$32,055	CRC Screening	Rockland	ME
Penobscot Community Health Care	Provider Reminder and Recall System for Colorectal Cancer Screening	2016	$30,000	CRC Screening	Bangor	ME
Penobscot Community Health Center	Expanding Systems to Increase Colorectal Cancer Screening through Patient Outreach and Recall	2016	$100,000	CRC Screening	Bangor	ME
Penobscot Community Health Care	Improving Colorectal Screening Rates via Use of a Medical Support Assistant	2018	$100,000	CRC Screening	Bangor	ME
Penobscot Community Health Care	Improving Colorectal Screening Rates via Community Support Workers	2019	$100,000	CRC Screening	Bangor	ME
Sebasticook Valley Health	Outreach, education, and Navigation Program to Increase Colorectal Cancer Screenings	2018	$85,791	CRC Screening	Pittsfield	ME
Waldo County General Hospital	Waldo Screen to Save	2017	$44,566	CRC Screening	Rockland	ME

Grant Results

The CRC grants provided by MCF from 2015-2021 resulted in many positive outcomes for grantees, Maine's communities, and those experiencing colorectal cancer in Maine. A summary of some of these outcomes is provided below.

- Grant funding resulted in 217 new or expanded partnerships with outside organizations.
- 91% of grants developed materials that were distributed to raise awareness of colorectal cancer.
- 75% utilized patient outreach and media advertising events.
- 83% of projects involved modification of CRC screening policies or protocols, and 91% provided reminders for appointment screenings and scheduling.
- 83% of grantees included components to increase patient access (i.e., provide transportation).
- 30,898 new patients who had never received CRC screening were identified for screening.
- 21 grantees saw an improvement in their CRC screening rates comparing the start of the grant period to the end. Screening rates improved from a baseline of 60% to 69% on average.
- A total of 37 new staff members across 15 organizations were hired as a result of the grants.
- 96% of grants resulted in staff receiving additional training related to colorectal cancer screening, with 385 staff members receiving training in total.

It is estimated that because of increased CRC screening rates, an additional 12,872 Maine individuals received CRC screening. This includes specific high-risk populations, including those without health insurance, and those lacking transportation to reach their provider.

Impact of MCF Grants

The effectiveness of CRC screening on reductions in mortality and the cost-effectiveness of screening have been well documented in clinical studies, starting in 1993 when the efficacy of CRC screening with guaiac FOBT was demonstrated.[5] From 1993 to 2009, a total of 55 studies were published examining 32 unique cost-effectiveness models. All studies found that colorectal cancer screening was cost-effective or even cost-saving compared with no screening.[6]

However, studies disagree as to which screening method is most effective or had the best incremental cost-effectiveness ratio for a given willingness to pay per life-year gained. Results show no significant differences in life-years gained with annual screening with a highly sensitivity FOBT, 10-yearly colonoscopy, or with a combination of annual FOBT and 5-yearly sigmoidoscopy. As specified by the U.S. Preventive Services Task Force, the best CRC screening test is the one that gets done.[7]

Using estimates derived from modeling conducted by the Cancer Intervention and Surveillance Modeling Network (CISNET), the U.S. Preventive Services Task Force provides estimated number of life-years gained, colorectal cancer deaths averted, lifetime colonoscopies required, and resulting complications per 1,000 screened adults aged 50 to 75 years for each of the screening strategies. According to these estimates:

- The number of life-years gained per 1,000 individuals screened ranges from a low of 181 to a high of 275, depending on the type of screening tests performed.

- The number of colorectal cancer deaths averted per 1,000 individuals screened ranges from a low of 17 to a high of 24.

Methods for calculating life-years saved and cost-effectiveness

This analysis focused primarily on life-years saved and deaths averted because of the interventions and the cost per life-year. The basis for the analysis is the number of additional screenings that occurred because of the intervention. This was calculated using the reported increase in CRC screening rates and projecting each reported rate increase on the reported patient populations eligible for screening for each grantee. This yielded a subset of the total screenings conducted by each grantee which can be attributed to the increase in screening rates achieved using grant funding.

The additional screenings were adjusted to a 60% compliance rate to match the national average for screening compliance as not all individuals will maintain a screening regimen during the recommended ages of 50-75[3]. Estimates in Table 1 are averaged across the grantees who provided data for this evaluation. High and low estimates are provided to illustrate the range of potential benefits and are based on estimates of life-years saved per 1,000 individuals screened provided by the U.S. Preventive Services Task Force.

Table 1: Outcomes for MCF Colorectal Cancer Screening Grants

Adjusted Screenings with Compliance Rate*	Number of Life-Years Saved*			Number of Cancer Deaths Averted*		
	Low	Mid	High	Low	Mid	High
7,723	1,398	1,761	2,124	131	158	185

** Based on CISNET estimates and a 60% compliance rate for screenings*

Table 2: Cost-Effectiveness of MCF Colorectal Cancer Screening Grants

Adjusted Screenings with Compliance Rate*	Grant $ Per Life-Year Saved*			Grant $ Per Cancer Death Averted*		
	Low	Mid	High	Low	Mid	High
7,723	$594	$472	$391	$6,324	$5,244	$4,480

** Based on CISNET estimates and a 60% compliance rate for screenings*

Results

Assuming an estimated 60% compliance rate, an additional 7,723 individuals are expected to continue a recommended CRC screening protocol as a result of the grants issued through 2021. In terms of life years saved, this translates to between 1,398 and 2,124 years. The cost per life year saved in dollars ranges from $391 to $594.

Discussion

Maine Cancer Foundation colorectal cancer grants have shown to be highly effective at increasing CRC screening rates, which will, in turn, save the lives of many Mainers. In addition to the many operational and procedural improvements that were made as a result of the grants, grantees reported identifying 30,898 new patients for screening, resulting in 12,872 additional CRC screenings for these patients. A considerable number of lives are being saved compared to the number of screenings being performed and the relatively low cost of a CRC screening. At a cost of $391 to $594 grant dollars per life-year saved, the intervention is extremely cost-effective.

Based on the results of the analysis and the estimates it produced, the colorectal cancer grantees are making significant progress towards reducing the rates of colorectal cancer and mortality in Maine. However, the results of this analysis do have some limitations. While MDR has taken many efforts to ensure the validity of the data and results, the calculations are based off data provided by grantees, which may be inconsistently reported or not reported at all. Life-years saved and cancer deaths averted are calculated based on estimates for the U.S. developed by the U.S. Preventive Services Task Force. There may be confounders specific to the state that might make the estimates less accurate for Maine specifically and less representative of what will happen over time.

Also, note that the cost and number of life-years saved is an estimate of the impact the entire pool of CRC grant money had on the reported population of eligible patients. Individual grants may have overperformed or underperformed compared to this estimate. To illustrate this, the estimated low cost per life-year ranged from $131 to $13,233 by the grantee. Despite the variability, the data strongly suggest that CRC grants are having a significant positive impact both individually and overall.

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1B. Lung Cancer Screening

Background

Lung cancer is the leading cause of cancer death in Maine for both men and women, with an age-adjusted mortality rate of 44.9 per 100,000.[1] Lung cancer is causally linked to several environmental factors including smoking, secondhand smoke, and radon exposure.[2] These causes are very common in Maine, particularly tobacco use and radon. According to the Maine Lung Cancer Coalition, radon exposure is the second-leading cause after smoking.[3]

Maine Cancer Foundation has awarded **7 lung cancer grants** totaling **$663,429**.

This has helped Maine Lung Cancer Coalition develop a statewide initiative that has resulted in **3,905** referrals for services and screening and **2,438** low-dose CT scans.

Summary of MCF Grants 2015-2021

Since 2015, Maine Cancer Foundation has made a significant investment in Maine with the goal of reducing lung cancer incidence and mortality. In 2016, MCF awarded a lung cancer grant to Maine Lung Cancer Coalition (formerly The Maine LungCAPS Initiative). This grant totaled $400,000. The MLCC is implementing a multi-pronged set of interventions directed at two specific aims:

- Engaging and educating the general public, patients, health care providers, health care payers, and policymakers about evidence-based lung cancer prevention and screening practices and;
- Developing, implementing, and disseminating innovative strategies to increase access to evidence-based lung cancer prevention and screening services to the entire Maine population, focusing on high-risk individuals in rural, underserved areas of the state.

Additional lung cancer grants were awarded in 2018 and 2021 with the goal of increasing lung cancer screening and prevention efforts in the state. These organizations have focused on activities including developing new lung cancer screening guidelines, disseminating educational materials related to smoking cessation services, and implementing interventions to address barriers in access to care, including through targeting underserved and low-income regions of Maine.

Maine Cancer Foundation has awarded $503,674 dollars through 7 lung cancer screening grants, including:

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Cary Medical Center	Screen Aroostook for Lung Cancer	2021	$40,000	Lung Cancer Screening	Caribou	ME
Maine Medical Center	Maine Lung Cancer Coalition	2016	$400,000	Lung Cancer Screening	Scarborough	ME

Maine Medical Center Research Institute	Integrating personalized risk information in Low-Dose CT screening for lung cancer	2015	$100,000	Lung Cancer Screening	Scarborough	ME
Maine Medical Center	Maine Primary Care Provider Lung Cancer Screening Survey	2018	$3,674	Lung Cancer Screening	Scarborough	ME
Maine Medical Center	Dissemination and Implementation of New Lung Cancer Screening Guidelines	2021	$39,979	Lung Cancer Screening	Portland	ME
MaineHealth dba Coastal Healthcare Alliance	Coastal Healthcare Alliance Comprehensive Lung Cancer Screening Program	2021	$39,650	Lung Cancer Screening	Rockport	ME
St. Joseph Hospital - Community Care Partnership of Maine	Lung Cancer Prevention and Early Detection Project	2021	$39,946	Lung Cancer Screening	Bangor	ME

Grant Results

The Maine Lung Cancer Coalition detailed a number of significant accomplishments with data to support their efforts. Among them include the following:

- Development of and launch of a new educational and informational website: https://mainelungcancercoalition.org
- 130 new partnerships have resulted from the Maine Lung Cancer Coalition initiative.
- 37 outreach events have been conducted. Members of the MLCC have delivered presentations both in community and academic settings.
- Two learning modules were designed to educate providers about integrating tobacco treatment along the continuum of lung cancer screening.
- 13 staff have received training and 5 new staff have been hired. Provider education has been provided through webinars and learning communities. The program has also engaged hospitals currently implementing or considering LDCT (low dose computed tomography) screening programs.
- 3,905 patients have been provided referrals to tobacco cessation programs or services.
- 2,438 low-dose CT (LDCT) scans were performed.
- 31 new cases of lung cancer have been identified.

The MLCC met or exceeded the expectations they outlined at the start of the grant. Year one was spent building relationships and infrastructure and following years have focused on these partnerships working together to execute the MLCC's goals and deliverables. MLCC has been successful in forming relationships, building new partnerships, disseminating findings, and growing its membership and capacity.

The development and growth of the Lung Cancer Screening Learning Community exceeded expectations. The Learning Community has allowed MLCC to engage a wide range of providers who are leading or interested in establishing LDCT programs. The AEC has been successful in building data sets, preparing publications, and presenting findings nationally over a short period of time.

According to Maine Health's 2018 annual report, the MLCC is also engaging in health policy advocacy. Specially it has been working with its partners to build capacity to collect and track patient screening and lung cancer diagnosis number. As of 2018, 18 screening sites had been established across the state. These sites can provide LDCT scans to detect lung cancer at an early stage.

Results from the 2021 lung cancer screening grants are not yet available due to how recently these grants were awarded. Future updates to the analysis and report should provide more information on the results and impacts from these grantees.

Impact of MCF Grants

The Maine Lung Cancer Coalition achieved many significant milestones and continues to grow on these achievements. This project has accomplished significantly more in terms of building infrastructure and capacity than similarly funded projects in other grant categories. As a result of these efforts, thousands of patients have been referred for screening and to tobacco cessation programs or services and nearly 2,500 LDCT scans were performed on Maine patients. Due to these screening efforts, at least 31 new cases of lung cancer have been identified.

The impact of MLCC's activities on lung cancer incidence and mortality in the state will likely require several years of action before a measurable change can be detected. It may be challenging to directly measure the effect of MLCC's efforts and assess their contribution to changes in lung cancer. MLCC's attention is spread across numerous stakeholders and provider practices. Parsing out the impact on each partner or at the cumulative level will be a challenge given the confounding effects of other lung cancer initiatives taking place across the state at the same time.

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2. Transportation

Background

Among the common barriers to health care, transportation stands out as both a geographically and economically challenging hurdle for cancer patients. Without personal transportation, patients face unfavorable odds in their efforts to access care. Even if a patient owns transportation, approximately 61% of Maine's population lives in rural areas far from the cancer care centers located in the metropolitan areas and neighboring states.[1] Previous research conducted by Maine Cancer Foundation and MDR found that patients living in rural areas of the state can travel well over 100 miles one way to receive cancer care within the state (not including out of state travel).

Maine Cancer Foundation has awarded **57 transportation grants** totaling **$1,846,496**.

This has helped thousands of Mainers travel to cancer care appointments by providing a total of in **39,810** additional rides, resulting in over **3.8 million** miles traveled.

Coordinating long distance travel or access to transportation, treatment schedule, and lodging can be significant obstacles to patients whose health is in decline or those with limited resources. Compounding the stress of coordinating travel is the financial burden of traveling long distances for care multiple times per month or week. These trips can quickly become costly in terms of fuel, highway tolls, and vehicle maintenance, and these additional costs disproportionately impact low-income and rural residents in Maine[2]. Overall, these transportation barriers are associated with greater rates of missed appointments, postponed prescriptions, and poorer care outcomes[3].

Summary of MCF Grants 2015-2020

Since 2015, the Maine Cancer Foundation has made significant investments in organizations around Maine with the goal of improving transportation for cancer patients. These organizations have implemented interventions such as utilizing volunteer and employee drivers to provide rides to patients, distributing gas cards or reimbursements for non-mileage expenses, participating in patient navigation programs at cancer care centers, and offering housing or lodging services/reimbursements to reduce the need to travel back and forth to cancer care centers. Some of the projects implemented awareness building components, but most served pre-established populations of need.

Maine Cancer Foundation has awarded $1,846,496 through 57 transportation grants to 19 organizations, including:

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Angel Flight Northeast	Changing Lives One Flight at a Time	2018	$30,000	Transportation	North Andover	MA
Angel Flight of New England	Changing Lives One Flight at a Time	2020	$40,000	Transportation	North Andover	MA

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Beth C. Wright Cancer Resource Center	Access to Cancer Treatment	2015	$7,000	Transportation	Ellsworth	ME
Beth C. Wright Cancer Resource Center	Access to Cancer Treatment	2016	$15,000	Transportation	Ellsworth	ME
Beth C. Wright Cancer Resource Center	Access To Cancer Treatment	2017	$50,000	Transportation	Ellsworth	ME
Beth C. Wright Cancer Resource Center	Access To Cancer Treatment	2017	$7,500	Transportation	Ellsworth	ME
Beth C. Wright Cancer Resource Center	Access To Cancer Treatment	2019	$60,000	Transportation	Ellsworth	ME
Brian's Ride Cancer Fund	Transportation and Lodging Assistance for Cancer Patients	2018	$40,000	Transportation	Caribou	ME
Brian's Ride Cancer Fund	Transportation and Lodging Assistance for Cancer Patients	2020	$40,000	Transportation	Caribou	ME
Cancer Resource Center of Western Maine	Access to Cancer Care through Transportation	2018	$10,000	Transportation	Norway	ME
Cancer Resource Center of Western Maine	Transportation and Lodging Grant for Cancer Patients in Western Maine	2019	$30,000	Transportation	Norway	ME
Community Concepts	Transportation	2015	$10,000	Transportation	Lewiston	ME
Community Concepts	Transportation	2016	$15,000	Transportation	Lewiston	ME
Community Concepts	The Cancer Patient Transportation Project	2017	$50,000	Transportation	Lewiston	ME
Community Concepts	Community Concepts Transportation for Cancer Patients	2019	$60,000	Transportation	Lewiston	ME
Dean Snell Cancer Foundation	Patient Transportation Assistance Program	2015	$10,000	Transportation	Brunswick	ME

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Dean Snell Cancer Foundation	Patient Transportation Assistance Program	2016	$15,000	Transportation	Brunswick	ME
Dean Snell Cancer Foundation	Patient Transportation Program	2017	$45,000	Transportation	Brunswick	ME
Dean Snell Cancer Foundation	Patient Transportation Program	2017	$7,500	Transportation	Brunswick	ME
Dean Snell Cancer Foundation	Patient Transportation and Lodging Program	2019	$60,000	Transportation	Brunswick	ME
Dempsey Center	The Maine Fund for Cancer Patients	2015	$4,000	Transportation	Lewiston	ME
Dempsey Center	The Maine Fund for Cancer Patients	2016	$4,000	Transportation	Lewiston	ME
Downeast Community Partners	DCP Rides for a Cure	2017	$50,000	Transportation	Ellsworth	ME
Downeast Community Partners	DCP Rides for a Cure	2019	$60,000	Transportation	Ellsworth	ME
Downeast Community Partners	Transportation	2016	$12,000	Transportation	Ellsworth	ME
Edgar J. (Guy) Paradis Cancer Fund	Support for Transportation to and from Cancer Services for St. John Valley Residents	2020	$40,000	Transportation	Fort Kent	ME
Friends in Action	Cancer Patient Transportation	2020	$20,000	Transportation	Ellsworth	ME
Friends in Action	Friends in Action transportation	2018	$30,000	Transportation	Ellsworth	ME
Hospitality Homes	Hospitality Homes Maine Boston Network	2017	$38,000	Transportation	Boston	MA
Hospitality Homes	Ensuring Free Lodging and Transportation for Maine Cancer Patients Seeking Care in Boston	2019	$60,000	Transportation	Boston	MA
Kennebec Valley Community Action Program	KVCAP Cancer Transportation Project	2017	$50,000	Transportation	Waterville	ME

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Kennebec Valley Community Action Program	Transportation for cancer related services	2019	$50,000	Transportation	Waterville	ME
Lake Region Senior Service	Healthcare Access Program	2015	$10,000	Transportation	Bridgton	ME
Lake Region Senior Service	Healthcare Access Program	2016	$15,000	Transportation	Bridgton	ME
Lake Region Senior Service	Cancer Patient Transportation	2017	$36,000	Transportation	Bridgton	ME
Lake Region Senior Service	Cancer Patient Transportation	2017	$7,500	Transportation	Bridgton	ME
Lake Region Senior Services	Cancer Patient Transportation Program	2019	$38,570	Transportation	Bridgton	ME
Northern Light AR Gould Cancer Care	RideLink: Supporting Cancer Patient Transportation and Wellbeing	2020	$40,000	Transportation	Presque Isle	ME
Northern Light Eastern Maine Medical Center	Creating a Systematic Approach to Transportation and Lodging Assistance for Rural Cancer Care Patients	2020	$40,000	Transportation	Bangor	ME
Northern Light Mercy Hospital	Piloting Uber Health as a Resource to Provide Reliable Transportation for Cancer Patients in the Portland Area	2020	$16,560	Transportation	Portland	ME
MaineHealth DBA Maine Medical Center	Rideshare for Cancer Care	2019	$34,560	Transportation	Scarborough	ME
Passamaquoddy Tribe Pleasant Point Health Center	Pleasant Point Patient Assistance	2019	$45,840	Transportation	Perry	ME
Patient AirLift Services	Eliminating Transportation Barriers for Cancer Patients in Maine	2020	$40,000	Transportation	Farmingdale	NY

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Patient Airlift Services	Eliminating Transportation Barriers for Patients in Maine	2018	$30,000	Transportation	Farmingdale	NY
Penquis CAP	Access to Cancer Care	2015	$10,000	Transportation	Bangor	ME
Penquis CAP	Access to Cancer Care	2016	$15,000	Transportation	Bangor	ME
Penquis CAP	Accessing Cancer Care	2017	$50,000	Transportation	Bangor	ME
Penquis CAP	Accessing Cancer Care	2017	$7,500	Transportation	Bangor	ME
Penquis CAP	Accessing Cancer Care	2019	$60,000	Transportation	Bangor	ME
Snell Foundation	Transportation & Lodging Assistance Program	2020	$10,000	Transportation	Biddeford	ME
The Boston House	Access for Maine Children	2020	$40,000	Transportation	Brookline	MA
The Leukemia & Lymphoma Society	Other Medical Expenses	2018	$50,000	Transportation	Wellesley	MA
Waldo Community Action Partners	Collaboration for Cancer Care Transportation	2017	$49,966	Transportation	Belfast	ME
Waldo Community Action Partners	Midcoast Cancer Care Transportation Network	2019	$60,000	Transportation	Belfast	ME
York County Community Action Corporation	Connecting to Cancer Care	2015	$10,000	Transportation	Sanford	ME
York County Community Action Corporation	Connecting to Cancer Care	2017	$50,000	Transportation	Sanford	ME
York County Community Action Corporation	Connecting to Cancer Care	2019	$60,000	Transportation	Sanford	ME

Grant Results

The transportation grants provided by MCF from 2015-2020 resulted in several positive outcomes for grantees, Maine's communities and those receiving cancer care in Maine. A summary of some of these outcomes is provided below.

- 57 grants resulted in 216 additional partnerships.

- 77% involved the development and distribution informational materials.
- 68% utilized outreach and media advertising events.
- A total of 3,058 individuals in the target population were educated about transportation options through outreach sessions.
- A total of 1,610 volunteers and 342 employees provided one or more rides for cancer patients.
- Grantees provided a total of 1,392 gas cards averaging $105 per card.
- 39,810 trips were made with an average of 118 miles per trip.
- Across 33 grantees, the self-reported average cost per mile of driving is between $0.10 and $3.40 (up to $4.00 for flying).
- 32 grantees provided repeat rides for over 2,000 clients.
- A total of 7,729 repeat rides averaging 135 miles were provided.
- An estimated total of 3,841,781 miles were traveled as a result of the grants.

As a result of transportation efforts, 39,810 trips were provided to individuals in Maine to help them attend cancer care appointments; this includes populations from both rural and urban settings.

In addition to overall findings on transportation grant outcomes and activities spanning from 2015 to 2021, the summary below provides detailed findings from grantees reporting in 2021 alone. In order to improve the quality of data collected across transportation grants of varying types (i.e., lodging, flights, driving services), MDR and MCF adapted the existing survey, which allows for grantees to provide information relevant to their project and services. Thus, some prior year data could not be integrated into these findings and the outcomes presented below reflect grants that submitted data in 2021:

- 8 organizations helped 203 patients receive lodging or hotel services, totaling 763 nights of lodging provided.
- One reporting flight grant has provided air travel services to 42 patients, totaling 150 flights and 32,000 miles flown throughout the project thus far.

Impact of MCF Grants

Published literature studying transportation initiatives is limited. More common are studies that have highlighted the extreme need for transportation services for cancer patients. As previously discussed, poorer populations are more likely to report transportation barriers when accessing health care in general. A systematic review of transportation and health needs literature suggests that between 10-51% impoverished patients experience transportation barriers that prevent care and may worsen health outcomes[3]. Another review found strong correlations between travel burden and patient quality of life and prognosis[4]. Some research suggests that telemedicine may be a viable intervention for the most rural of cancer patients when routine care is needed, but this fails to relieve the travel burden when treatments such as radiation, chemotherapy, or surgery and diagnostics are needed[5]. Telemedicine may alleviate a portion of the travel burden, but it will never eliminate it for patients requiring ongoing treatment.

Methods for calculating cost-effectiveness

The cost-effectiveness metrics selected for the transportation grants are the average cost per mile, ride, and person. Total rides, rides per grant, total miles, and miles per grant are included to demonstrate the scale of impact the transportation grants have had. The cost measures are derived from totals and averages across the 30 grantees who provided detailed data on mileage and costs. Average cost per person an average of the total spent on transportation per patient across the responding grants.

The results of the cost-effectiveness calculations are listed below:

- Total rides provided – 39,810
- Average rides per grant – 1,206
- Total miles traveled – 3,841,781
- Average miles driven per grant – 123,928
- Average cost per mile - $0.35
- Average cost per ride - $33.44
  Average cost per person - $585.54

Results

Among the grantees who reported data, the estimated average cost per mile is about $0.35, and the average cost per ride is roughly $33.44. Per person, the grants spent about $585.54 on average in transportation, lodging, and fuel costs. A total of 39,810 rides covered 3,841,781 miles in roughly five years of grant-making activity. Each grantee provided an average of 1,206 rides which spanned an average of 123,928 miles driven or flown.

Discussion

Results suggest that Maine Cancer Foundation transportation grants are achieving their short and mid-term outcomes of 1) increasing number of people in Maine utilizing transportation services to get to cancer treatments services, 2) increasing the ability of health care providers and patients to utilize transportation services made available by grantees; 3) increasing the number of patients receiving services for cancer care; and 4) decreasing the financial burden on patients with cancer or in recovery.

A total of 39,810 rides were provided to patients to receive cancer treatment, covering over three million miles of distance. It is likely that some of the patients who received transportation through these grants would not have been able to get to treatment without these services, resulting in missed appointments, lower compliance rates for screening or follow-ups, or possibly even a lack of treatment altogether. In addition, those who may have found alternative transportation may have had to pay for it themselves, potentially creating a financial burden for those unable to afford it.

If 100% of the grant funding is passed along to the patients in the form of transportation, it is reasonable to conclude that on average, each person served would save $585.54 as a result receiving transportation and lodging services. The true cost savings per person may be higher or lower than this accounting for grantee costs and cost savings provided though economies of scale. Some funding goes toward administration, marketing and advertising, networking, or vehicle maintenance. To maximize the funding benefits for the patients, as much of the money should go towards providing transportation services as possible.

Some caution should be taken when interpreting these results. They only represent the data of 31 grants (apart from the average cost per person estimate which was calculated using 44 of the grants). These estimates could change with the additional data from the other 25 grants. There is variance in the estimates produced by the analysis. The cost of transportation per person can vary dramatically for individuals based on their mode of transportation, how many rides they take, and what distance they travel. Similarly, the actual cost per ride and the average number of miles per trip can vary significantly.

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3. Patient Navigation

Background

Patient navigation focuses heavily on reducing barriers to cancer care. The barriers addressed by navigators vary widely but commonly include timeliness of care, finances and insurance, transportation, and general support during the patient's experience with cancer care. Benefits from patient navigation are largely expressed during the early stages of intervention which include prevention, screening, and diagnostics[1].

Maine Cancer Foundation has awarded **16 patient navigation grants** totaling **$2,455,848**.

This has resulted in 21,218 patients identified for screening, and **5,442** additional referrals for diagnostic follow-up **provided.**

Studies have demonstrated that patient navigation can significantly reduce the time to resolution for abnormal screening results[2]. Improvements to the diagnostic resolution timeframe are most pronounced among socioeconomically disadvantaged populations[2,3]. They benefit the most from navigational assistance particularly when they have low levels of health literacy or limited financial resources and are uninsured.

A study of patient navigator programs in Pennsylvania hospitals found that most navigator time was spent on issues related to financial problems, transportation, and end-of-life issues such as arrangements for dependent care[4]. On average, 169 minutes were spent on financial navigation, 74 on transportation, and between 60 to 65 for end-of-life issues[4]. The navigators play an important role helping patients coordinate the various and often overwhelming aspects of their care and personal lives following abnormal screening and positive diagnostic results.

Summary of MCF Grants 2015-2020

Since 2015, Maine Cancer Foundation has made significant investments in organizations around Maine with the goal of providing patient navigation services for cancer patients. In support of these efforts, Maine Cancer Foundation awarded three-year capacity-building grants to organizations to develop, implement, and sustain patient navigation programs that support patients through a cancer diagnosis. These organizations have implemented evidenced-based interventions, such as providing navigation for topics like insurance and financial strategies, transportation, and the coordination of cancer care. These strategies have been demonstrated to reduce the time to diagnostic resolution which, in cases of cancer positive diagnoses, can result in more expedient intervention and better health outcomes. Many of these projects involved systems changes, but also include components to provide education, increase awareness, and increase access to individuals who have problems getting preventative treatment and screening.

Since 2015, Maine Cancer Foundation has awarded $2,455,848 through 16 multi-year patient navigation grants to 15 organizations, including:

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Aroostook Medical Center	Early Access Patient Navigator	2015	$164,000	Patient Navigator	Presque Isle	ME
Caring Connections/Bangor YMCA	Caring Connections Patient Navigator Position	2017	$110,386	Patient Navigator	Bangor	ME
Cary Medical Center	Navigating the Journey	2018	$161,557	Patient Navigator	Caribou	ME
Central Maine Medical Center	Lung Screening Navigator with Tracking and Reporting Software System	2017	$164,000	Patient Navigator	Lewiston	ME
Greater Portland Health	Patient navigator to reduce cancer incidence and mortality rates among minority populations	2018	$164,000	Patient Navigator	Portland	ME
Healthy Acadia	Downeast Cancer Patient Navigation	2016	$164,000	Patient Navigator	Ellsworth	ME
Healthy Acadia	Downeast Cancer Patient Navigation through Continuum of Care	2019	$111,368	Patient Navigator	Ellsworth	ME
Healthy Community Coalition of Greater Franklin County	Franklin's Navigator Program for Colorectal Cancer Screening	2015	$164,000	Patient Navigator	Farmington	ME
Katahdin Valley Health Center	KVHC Patient Navigator Project	2018	$164,000	Patient Navigator	Patten	ME
Maine Mobile Health Program	Maine Immigrant Patient navigation Project	2016	$138,725	Patient Navigator	Augusta	ME
MaineGeneral Medical Center	Reducing Barriers to Cancer Care for Low Income, Rural Residents	2017	$161,562	Patient Navigator	Augusta	ME
Mount Desert Island Hospital	Establishing a Patient Navigator Program at Mount Desert Island Hospital	2017	$161,614	Patient Navigator	Bar Harbor	ME
Pen Bay Medical Center	Pen Bay Medical Center, Patient Navigator Program	2017	$161,388	Patient Navigator	Rockland	ME

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Penobscot Community Health Care	Eliminating Barriers to Cancer Screening through Use of Navigator Medical Assistants	2015	$164,000	Patient Navigator	Bangor	ME
Sebasticook Valley Health	Patient Navigation Outreach Program	2015	$137,248	Patient Navigator	Pittsfield	ME
Southern Maine Health Care	Ambulatory Nurse Navigator with emphasis on Lung Cancer	2016	$164,000	Patient Navigator	Biddeford	ME

Grant Results

The patient navigation grants provided by MCF from 2015-2020 resulted in several positive outcomes for grantees, Maine's communities and those receiving cancer care in Maine. A majority of the grant-funded programs that began with seed funding from Maine Cancer Foundation continue to exist and remain sustained by the applying organization. A summary of some of these outcomes is provided below.

- More than 41,341 individuals were targeted/eligible for services as a part of the patient navigation grants.
- Grants resulted in 141 additional partnerships with 93% of grantees reporting efforts to build new partnerships.
- 94% developed materials that were distributed to raise awareness of available resources.
- 73% utilized outreach and media advertising events.
- 100% of grants resulted in staff receiving additional training related to patient navigation services, with 123 current staff members receiving training.
- 88% of the grants hired additional staff. A total of 30 new staff members were hired as a result of the grants.
- 93% of grants included components to increase patient access to care.
- More than 21,218 patients were newly identified for cancer screening.
- 5,442 referrals for follow-ups were provided.
- 82% of grantees reduced the time between referral and follow-up screening or diagnostics.
- 67% of grantees reported improved screening rates for one or more of the following – breast, lung, cervical, colorectal, and skin cancer.
- 992 individuals were provided with financial resources.
- 494 individuals were assisted with insurance navigation.
- 469 individuals were provided with social services.

- 585 individuals were referred to assisted with transportation services.
- 684 individuals were assisted with other services.

It is estimated that due to patient navigator efforts, more than 1,000 individuals were connected with cancer care resources. This includes specific high-risk populations, including those without health insurance, and those lacking transportation to reach their provider. Given the continuation of many of these navigation programs, it can be assumed that this number will continue to grow over the lifetime of the programs.

Impact of MCF Grants

The primary focus of patient navigation is increasing the expediency of diagnostic resolution and providing reliable guidance to patients as they navigate the cancer care pathway. Most patient navigation relates to issues with insurance, transportation, and coordinating care. Successful programs have been shown to reduce the diagnostic resolution time and speed up care. Additionally, navigators assisting patients with accessing resources can increase the quality of the experience and patient satisfaction.

MDR Methods for calculating outcomes

The metrics for patient navigation were chosen based on the most complete data supplied by the grantees. A challenge in measuring patient navigation outcomes is that many grantees were focused on different aspects of the patient navigation experience – some with increasing access and reducing barriers for patients, others connecting patients with resources, and still others with identifying patients for screening and increasing screening rates.

Table 3: Patient Navigation Outcomes – Referrals and Reducing Follow-up Time

Number of grants working to reduce time between identification and follow-up/diagnosis	Number of patients newly identified for screening	Referrals for diagnostic follow-up provided	Time between identification and follow-up/diagnosis	
			Baseline	Post
9	21,218	5,442	72 days*	30 days*

**Note: Only three grantees measured and provided data on pre/post follow up times. Use caution when drawing conclusions for the larger population.*

Table 4: Patient Navigation Outcomes – Increased Screening

Number of grants with components to improve screening rates	% of grants improving screening rates	Lung Cancer Screening Rate		Cervical Cancer Screening Rate		Colorectal Cancer Screening Rate		Breast Cancer Screening Rate	
		Base	Post	Base	Post	Base	Post	Base	Post
6	67%*	22%	23%	61%	63%	57%	65%	59%	63%

**Among grantees who provided data on pre/post screening rates*

Results

Among newly identified patients needing screening, 5,442 received referrals for follow-up diagnostics. Patient navigators connected more than 1,000 patients with some type of resource or assistive services, including financial (993), insurance (494), transportation (585), social (469), and other services (684). These individuals received final assistance, health insurance navigation, connections with transportation and social services, as well as other help. In addition to these resources, 67% of grantees saw an improvement in their screening rates with lung, cervical, colorectal and breast cancer screening rates all improving from baseline.

Discussion

Given the variety of activities and work being conducted by patient navigation grantees, it is difficult to summarize the overall impact or cost effectiveness MCF's grants. However, among the data that was provided by grantees, the results suggest that MCF funding is being effectively used to hire and train navigators and other staff, educate patients, provide referrals for screening and treatment, and provide various types of resources that includes financial help, education, transportation, and help navigating insurance or coordinating care. While based on limited data from two grantees, the percentage of patients who were unable to access care decreased after receiving patient navigation services as a result of the grant efforts, from 70% at baseline to 34%. Screening rates for lung, cervical, colorectal and breast cancer improved between 1% and 5%.

One important area where the data are inconclusive for patient navigation is in reducing the time for diagnostic follow-up or resolution due to the few grants working on that component who were also able to provide us with data.

Navigators can help reduce the amount of time between abnormal cancer screening tests and follow-up diagnostics by communicating and helping patients with appointments, insurance issues, and other barriers. This is especially true among low-income, uninsured, and minority populations. Nine grantees reported working on reducing the time for diagnostic follow-up and all reported a reduction in wait times. Only three grantees reported data on the number of days between diagnosis and follow-up. While all showed improvement in the days between diagnosis and follow-up (from 72 days down to 30 days), this limited information may not accurately reflect totals across all grantees. This component of patient navigation should be monitored going forward to confirm these positive findings.

Another potential issue with patient navigation is the lower rate of conversion from identification of patients needed screening to actual referrals and appointments with providers. While grantees noted 21,218 individuals were newly identified for screening, only a small percentage of individuals were provided with an actual referral. As was noted by some grantees there can be significant capacity constraints that prevent grantees from reaching out to everyone. Limited staffing, coupled with the personalized service required from patient navigation, means there simply aren't enough hours in the day to contact everyone. In addition, reluctance, or refusal from individuals to receive cancer screening and a lack of providers or availability of providers can also make it limit the ability of navigators to provide referrals to those in need of screening.

As we continue to get more complete data from grantees going forward, it will help confirm the positive impact of patient navigators in the state and allow for a more robust description of overall grant-making

effectiveness. The summary statistics and estimated metrics provided here likely underrepresent overall impact of these patient navigation grants to those in the state.

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4. HPV Vaccination

Background

HPV is causally associated with cervical, vaginal, vulvar, penile, anal, and oropharyngeal cancers, and is estimated to be the second leading cause of cervical cancer among women worldwide[1]. In Maine, the rate of HPV-related cancer is estimated to be around 13.5 per 100,000[1]. Among females in Maine, the rate of HPV-related cancers is 15 per 100,000, while among males, the rate is 11.9[1]. HPV-related cancers are associated most frequently with two strains of the virus, types 16 and 18, but there are over 200 variants of HPV found in the human body. Vaccines in the U.S. protect against these two types 16 and 18 in addition to about ten others depending on the vaccine variant. Both boys and girls ages 9 to 26 are encouraged to get a two-dose vaccine per the CDC's recommendations[2].

Maine Cancer Foundation has awarded **2 HPV vaccination grants** totaling **$356,117**.

This has resulted in 698 additional HPV vaccinations, roughly 25% of the eligible population.

The efficacy of HPV vaccines has been demonstrated in clinical trials evaluating HPV-associated conditions and persistent infection. In addition, modeling studies have shown consistently that the routine vaccination is a cost-effective use of public health resources, as long as vaccine duration of protection is sufficient[6]. However, there are no studies that confirm a measurable reduction of HPV associated cancers due to the increasing vaccination of the U.S. population. The CDC's Advisory Committee on Immunization Practices (ACIP) estimates that it will take decades before the population-level efficacy of HPV vaccination can be observed with respect to HPV-related cancers[3]. Despite the lack of evidence regarding cancer prevention, the HPV vaccine achieves between 60-99% efficacy for various HPV strains up to nine years post-vaccination[4].

Summary of MCF Grants 2015-2020

The Maine Cancer Foundation has made a significant investment to improve HPV vaccination rates in Maine. Since 2015 Maine Cancer Foundation has awarded 2 HPV grants totaling $356,117 to the following organization:

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Maine Quality Counts**	HPV Vaccination Learning Collaborative	2017	$264,201	HPV Vaccination	Manchester	ME
Maine Quality Counts	Maine HPV Project ECHO	2019	$91,916	HPV Vaccination	Manchester	ME

***Grantee implemented funding across four separate practices.*

The primary focus of the HPV grants is increasing vaccination rates with the goal of preventing HPV-associated cancers. This organization implemented evidence-based interventions, provider reminder

systems linked to patient EHRs, that have been shown to increase HPV vaccination rates. The project involved extensive health care provider education, capacity assessments of participating practices, and significant updates to EHR systems used to track vaccination status and HPV data.

Grant Results

The HPV grants provided by MCF between 2017 and 2020 resulted in several positive outcomes for the targeted pediatric practices and their patients. A summary of some of these outcomes is provided below.

- 8,724 individuals were included in the target population between the two grants, 5,474 were identified for vaccination.
- The grant resulted in 24 additional partnerships with participating practices.
- Both grants included the development and distribution of educational materials to the participating practices.
- Both grants provided training to practice staff, a total of 193 were trained.
- Both grants included components to expand patient access to services including establishing vaccine-only clinics, setting up nurse administered vaccine appointments, and providing education for parents and patients.
- Both grants increased vaccination rates across the participating practices, a cumulative 16% increase.
- The grants resulted in 698 additional vaccinations.
- The estimated per vaccine cost, based on the combined value of the grants, is $510.

Impact of MCF Grants

Description of the literature on HPV vaccination

While HPV vaccination has been demonstrated to be effective at preventing infections from common cancer-causing strains, there is no evidence to date that suggests the rate of HPV-related cancer is declining. This is due, in part, to the recent adoption of HPV vaccination practices starting in 2006. According to the CDC and ACIP, it will take decades to determine the impact of vaccination on HPV-related cancers in the U.S.

MDR Methods for calculating cost-effectiveness

Table 5: HPV Vaccination Outcomes

Total number of patients	Number of patients identified for HPV vaccination	Estimated Additional Vaccinations Provided	Percent of Eligible Population Vaccinated	Grant Dollar per Vaccination
8,724	5,474	698	25%	$510

Results

Across all practices targeted by these grants, 25% of the eligible population has received HPV vaccination at an estimated cost of $510 per vaccination. This is based on the total amount invested into the projects relative to the number of vaccinations completed. It is expected that the cost per vaccination will continue to decrease as both grants continue.

Discussion

Results indicate that the HPV vaccination grants increased the rate of HPV vaccination among adolescents in the participating practices. Increased vaccination rates are likely to have long-term reductive effects on the rates of HPV-related cancer among both men and women. The procedural and infrastructural changes implanted in this initiative have proven to be successful models for increasing vaccination rates. It is likely that these methods would be highly successful in other areas as well. It appears that this was a productive, well-organized, and impactful effort to address insufficient HPV immunization among Maine children.

Most of the work has focused on building infrastructure and facilitating provider education to help increase vaccination rates. New EHRs, provider trainings, and revisions of processes and protocols were necessary to boost the rates at each practice. The quality of the data provided for this grant is relatively high, particularly with respect to the vaccination rates. All the practices involved provided target population estimates, pre-/post-intervention vaccination rates, and everything was reported consistently across the practices. The results of the analysis should be considered accurate for this grant category and are likely to represent the true impact of the grantee's activity.

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5. Tobacco Prevention and Cessation

& The Youth Tobacco Media Campaign

Background

Maine Cancer Foundation has awarded **25 tobacco grants** totaling **$2,356,473.**

This has resulted in **6,644** individuals receiving referrals to tobacco cessation services and 15,747 receiving tobacco prevention education.

Tobacco use is one of the most well-studied causes of cancer and a leading preventable cause in the US. Using tobacco is associated with higher rates of cancer incidence and mortality for lung cancer and many other types of cancer[1]. Maine is among the worst states in terms of tobacco-related cancer incidences with a rate of 132.3 per 100,000 each year, compared to the US rate of 125.8[4]. Tobacco-related cancers are the leading cancer in Maine both by incidence and mortality (2,550 per 100,000)[4].

Reducing tobacco use requires a multipronged approach involving "educational, clinical, regulatory, economic, and social strategies" aimed at increasing quitting, reducing use and secondhand smoke exposure, preventing youth from becoming new smokers, and addressing tobacco disparities between socioeconomic groups[3]. The CDC has funded tobacco interventions from the federal to local levels, and their research has found that the longest running programs are the most effective at reducing both tobacco use and tobacco-related cancer incidence[3]. Reductions in tobacco use among youth in Florida were 50% and 35% among middle and high school students following a youth-focused media campaign[3]. California, the state maintaining the longest-running tobacco control program, reduced the adult smoking prevalence from 22.7% to 11.9% in a 22-year period while its lung cancer incidence rate declined four times faster than the rest of the country[3].

In 2019, 17.9% of adults in Maine reported using cigarettes. Cigarette use among Maine youth is lower; 6.8% of high schoolers report smoking cigarettes. Including all tobacco use, however, this figure is much higher; 33.0% of Maine high school youth reported currently using any tobacco product including e-cigarettes in 2019[8]. Big Tobacco spends $43 million in Maine to market their products in ways that appeal to youth[9]. Tobacco companies deny targeting youth directly, but tobacco companies know 90% of smokers start before they are 18 years old. Through innovation and using duplicitous tactics, they continually look to gain replacement smokers for their products. Youth are highly influenced through digital engagement, and one in four Maine high school students report experimenting with smoking[10].

In an effort to prevent Maine youth from using tobacco products, a collaboration between Maine Cancer Foundation, Maine Center for Disease Control and Prevention and Rinck Advertising formed to develop a youth tobacco prevention campaign. Utilizing qualitative data from Maine youth focus groups, "**You Are the Target**" is a counter-marketing campaign that strategically intercepts youth via digital media platforms. Effective and long-term programs are crucial to reducing tobacco use and decreasing the incidence of tobacco-related cancers.

Summary of MCF Grants 2015-2021

Since 2015, Maine Cancer Foundation has made significant investments to reduce tobacco use and tobacco-related cancers in the state of Maine. The organizations receiving MCF grants have implemented a number of evidenced-based interventions which have included increasing outreach to youth, referring smokers to programs and quitting resources, and implementation of media campaigns that have been shown to reduce tobacco use. Many of these projects involved outreach and awareness aimed at connecting smokers or those considering smoking with cessation and prevention services. Referrals to cessation classes, counseling, programs, and the Maine Tobacco Quit Link comprise the bulk of grantee activities outside of awareness building.

Since 2015, Maine Cancer Foundation has awarded **$2,356,473** through 25 tobacco grants to 20 organizations, including:

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Access Health	Midcoast Youth Tobacco Intervention	2015	$16,099	Tobacco	Brunswick	ME
Aroostook County Action Program	Tobacco Cessation for Aroostook County Adults	2019	$79,310	Tobacco	Houlton	ME
Breathe Easy Coalition of Maine, City of Portland	Addressing Disparities in Tobacco Use and Exposure through Policy and Environmental Change	2015	$74,101	Tobacco	Portland	ME
Down East AIDS Network and the Health Equity Alliance	LGBTQ Tobacco Equity Project	2015	$57,669	Tobacco	Ellsworth	ME
Healthy Acadia	Reducing Tobacco Use in Downeast Maine	2017	$75,477	Tobacco	Ellsworth	ME
Healthy Androscoggin	Tobacco Education and Cessation Support for Adults in Androscoggin Country	2017	$52,419	Tobacco Cessation	Lewiston	ME
Healthy Androscoggin	Preventing Youth Smoking Through Community Education: The Tobacco 21 Law	2018	$94,816	Tobacco	Lewiston	ME
Healthy Androscoggin	Tobacco Support Group	2019	$9,123	Tobacco	Lewiston	ME
Healthy Communities of the Capital Area	Reaching More Moms, their Friends and Family	2017	$25,000	Tobacco	Gardiner	ME
Healthy Community Coalition of	Tobacco Free Franklin (Two Year Request)	2015	$199,976	Tobacco	Farmington	ME

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Greater Franklin County						
Kennebec Behavioral Health	KBH Clubhouse Tobacco Cessation Needs Assessment	2019	$7,500	Tobacco	Augusta	ME
Maine Public Health Association	MPHA Tobacco Coalition Cancer Prevention	2017	$10,000	Tobacco	Augusta	ME
Maine Public Health Association	Maine Tobacco Coalition for Cancer Prevention	2017	$99,264	Tobacco	Augusta	ME
Maine Public Health Association	Tobacco Prevention and Control Communications Project	2018	$94,275	Tobacco	Augusta	ME
MaineGeneral Medical Center	Engaging Rural, Low-Income Populations in Tobacco Cessation: A Community-Based Approach	2018	$91,959	Tobacco	Waterville	ME
MaineHealth – Center for Tobacco Independence	Building Capacity in Primary Care to Address Tobacco Dependence	2016	$50,000	Tobacco	Portland	ME
MaineHealth Care at Home	Tobacco Treatment Groups and Support	2019	$56,437	Tobacco	Saco	ME
MaineHealth - MaineHealth Cancer Care Network	Reducing tobacco use in oncology patients who continue to smoke while receiving treatment	2019	$71,398	Tobacco	Scarborough	ME
Mid Coast Hospital	Increasing Capacity to Provide Group Tobacco Treatment at Mid Coast Hospital	2018	$28,987	Tobacco	Brunswick	ME
New Mainers Public Health Initiative	Smoking Prevention Campaign for New Mainers	2019	$100,000	Tobacco	Lewiston	ME
Penobscot Bay YMCA/Knox County Community Health Coalition	Fresh Quit Knox County	2018	$90,307	Tobacco	Rockport	ME
Penobscot Community Health Care	Peer-Led Tobacco Cessation Training at Unlimited Solutions Clubhouse	2017	$26,116	Tobacco Cessation	Bangor	ME

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Public Health Research Institute	Wetamawe (Tobacco)	2017	$100,000	Tobacco	Deer Isle	ME
Rinck Advertising	Youth Tobacco Prevention Campaign	2017	$750,000	Tobacco Prevention	Lewiston	ME
Waldo County General Hospital	Reducing Smoking Rates among Patients with COPD	2018	$96,240	Tobacco	Rockland	ME

Grant Results

The tobacco grants provided by MCF from 2015-2021 resulted in several positive outcomes for grantees, Maine's communities and those with a smoking habit. A summary of some of these outcomes is provided below.

- 205,506 individuals were included in the target population for the grantees.
- 95% of projects resulted in new or expanded partnerships with outside organizations, totaling 185 partnerships across 20 organizations.
- 83% utilized outreach and media advertising events.
- 81% of grants resulted in staff receiving additional training related to tobacco cessation and prevention, with 419 staff members receiving training.
- 37% of the grants hired additional staff. A total of 10 new staff members were hired with the grants.
- 3,507 individuals were directed to cessation programs and 15,747 people received tobacco prevention education.
- 81% of projects provided referrals to Maine QuitLink, 59% provided referrals to cessation classes, and 44% provided referrals to one-on-one counseling.
- A total of 4,089 tobacco users were identified as a result of grantee programs.
- 55% of grants included components to increase patient access to care.

As a result of tobacco grantee efforts, a total of 492 individuals were confirmed to have quit or reduced their tobacco use, and many more who likely quit or reduced their use. This includes both youth and adult smokers of varying socioeconomic statuses from across the state.

Maine Cancer Foundation conducted a survey of Maine youth aged 13 to 18, representative of the population targeted with the media campaign. The survey contained a series of questions regarding awareness and perception of the "You Are the Target" campaign. Results of the survey showed that:

- Nearly half of teens (46%) said they saw a "You Are the Target" ad or video in the past year.
- Among those who saw a video, two-thirds were able to correctly describe the message of the campaign (*tobacco companies target youth with their marketing*).
- Overall, 19% of teens talked to one of their friends about tobacco or quitting after seeing the ads, while 7% said they quit using tobacco or thought about quitting.

- Among current tobacco users, 24% said they thought about quitting or reducing their use after seeing the ads.
- Based on the results of the survey, it is estimated that 41,170 teens saw an ad/video in the past year, and as a result of exposure to the campaign, nearly 8,000 Maine teens talked to one of their friends about tobacco or quitting and 3,000 quit using tobacco or thought about quitting.

Impact of MCF Grants

The Surgeon General's report, Health Consequences of Smoking—50 Years of Progress, concludes that, "The burden of death and disease from tobacco use in the United States is overwhelmingly caused by cigarettes and other combusted tobacco products;" and "comprehensive tobacco control programs and policies have been proven effective for controlling tobacco use."[5]

Numerous studies have validated the efficacy of tobacco control and cessation programs. This includes the Maine QuitLink (formally Maine Tobacco HelpLine), which has been demonstrated to produce 6-month quit rates of between 12% and 23% among current smokers.[6] Studies have also attempted to quantify the medical costs and quality-adjusted life years associated with smoking. These results have proven more varied, given the complex methods and assumptions required to produce the estimates. However, results from the Cancer Prevention Study II found:

> *Life expectancy among smokers who quit at age 35 exceeded that of continuing smokers by 6.9 to 8.5 years for men and 6.1 to 7.7 years for women. Smokers who quit at younger ages realized greater life extensions. However, even those who quit much later in life gained some benefits: among smokers who quit at age 65 years, men gained 1.4 to 2.0 years of life, and women gained 2.7 to 3.7 years.*[7]

Additional studies have produced similar results, showing that while quitting earlier in life produces a larger benefit, even older adults who quit smoking add years to their lives and reduce their risk of cancer.

The outcomes for the tobacco grants focused on the number of individuals seeking or being directed to cessation services and how many identified smokers reported themselves as successful quits or reduced use. The number of individuals reporting quitting or reducing their use was estimated using the data supported rate of quit/reduction and the population reportedly served by the grants. The results of the grant effectiveness analysis are tabulated below:

Table 6: Tobacco Prevention and Cessation Outcomes

# Received Tobacco Prevention Education	# Referred To Cessation Services	Tobacco Users Identified	Confirmed*			% Decreasing Tobacco Use or Quitting**
			Quits	Reductions in Use	Total	
15,747	3,507	4,089	209	283	492	23%

** Data on quits/reduced use from nine (out of 22) grantees that worked on, tracked, and provided this information.*

*** Calculated as 492 quits or reductions / 2,150 tobacco users who provided follow-up information on quit status.*

Results

Among the grantees reporting data, approximately 19,254 individuals sought help from a tobacco program and were referred to cessation services or were provided tobacco prevention education. A total of 4,089 tobacco users were identified and participated in grantee programming.

Among the grantees who tracked and provided data on tobacco users and quits, 492 (out of 2,150) tobacco users reported successfully quitting or reducing their tobacco use following exposure to the program. The average estimated quit or reduced use rate is 23% for smokers accessing these programs.

Maine youth were exposed to a tobacco awareness campaign through a variety of platforms and received messages that provided education about tobacco company marketing tactics, built awareness of the dangers and effects of tobacco use, and empowered youth to reject the manipulative messaging used by the tobacco companies.

Discussion

Grantees addressing tobacco prevention and cessation are engaged in a wide variety of activities making it difficult to collect and aggregate data to summarize the impact and cost-effectiveness of MCF grant funding. However, the data available for MCF Tobacco grantees show that they are reaching a large target population (205,256), building important partnerships with collaborators (185 new partnerships), providing much needed training to public health workers (419 staff members trained), and providing prevention education and treatment referrals to both youth and adults across the state.

Among those who reported quit data, 492 tobacco users confirmed to have quit or reduced their tobacco use, achieving a successful 23% quit/reduction success rate following exposure to one or more of the grantee programs or referrals. At least among the grantees that provided data, MCF funding is effectively reducing tobacco use and getting tobacco users to quit.

These results suggest that the education and assistance provided to smokers and referral services have been effective. From this analysis, grantees who reported quantitative data about their referrals, number of people interacted with, and post-program outcomes are making a positive impact on the rates of tobacco use in the short-term and cancer incidence long-term. It is reasonable to extrapolate based on life expectancy studies that MCF grant funding for tobacco prevention and cessation has (conservatively) saved thousands of years of life combined for those that have quit as a result of the programs.

Additional outcome tracking and data reporting would be necessary to fully summarize the impact of MCF grant funding on tobacco use in Maine. A lack of data on short-term outputs/outcomes such as quit attempts for many of the grantees makes it challenging to quantify the overall impact of the grants. We acknowledge that there are significant gaps in the data for some of the reported summary and outcome metrics.

Only nine grantees supplied data about the number of smokers and the post-program outcomes, and the 23% quit and reduction rate is based on these data. It is likely that additional data from other grantees and more accurate data from currently reporting grantees would affect the rate and estimated numbers of quits and reduced use.

With more data, Maine Cancer Foundation would have a better understanding of the cumulative tobacco program effectiveness, the number of tobacco users being referred and going to various tobacco programs, how many are quitting or reducing their use, and how many begin using tobacco again in the long-term. These data would help support a more thorough assessment of how these interventions are performing and the per dollar impact the grants have had on smoking and tobacco-related cancer in Maine.

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7. Sun Safety

Background

Skin conditions are exceedingly common in the U.S. and worldwide and are estimated to cost nearly $75 billion per year in the US alone.[1] Skin cancer including melanoma, nonmelanoma, and cutaneous lymphoma accounted for over 60% of the 22,953 deaths in 2013.[1] In Maine, the melanoma incidence rate is estimated to be 25.1 per 100,000, compared to the US rate of 22.6 per 100,000.[2] Maine's incidence is approximately 444 new cases of melanoma per year[2]. The mortality rate for melanoma is estimated to be 2.7 per 100,000, but most melanomas are curable if diagnosed early[3].

Maine Cancer Foundation has awarded **6 sun safety grants** totaling **$183,193.**

This has resulted in as many as **166,714 individuals** receiving at least one 1ml application of sunscreen at a cost of $0.15 per person.

Both malignant and non-malignant skin cancers are caused by chronic and acute exposure to solar UV radiation[4]. Exposure can be reduced using physical barriers such as clothing or staying indoors during the most intense periods of sun during the day. Protection of exposed skin is best achieved using sunscreens and sun blocks which have been demonstrated to reduce the incidence of cancerous skin lesions in fair-skinned persons[5]. An intervention in Australia demonstrated that long-term daily use of sunscreen can dramatically reduce the incidence of skin cancers. After a four-year intervention period, a subsequent analysis projected that daily lifetime sunscreen use in the intervention group (approximately 812 persons) would prevent 33 melanomas, 168 cutaneous carcinomas, and 4 melanoma deaths[6]. The authors concluded that daily sunscreen use is a cost-effective intervention that can meaningfully reduce the incidence of skin cancer among fair-skinned people[6].

Summary of MCF Grants 2016-2021

Since 2016, the Maine Cancer Foundation has made significant investments in organizations around Maine with the goal of increasing sun safety practices. Most of these projects involved building infrastructure, training employees at intervention sites, and educating the population to increase sun safety awareness.

As part of Challenge Cancer 2020, Maine Cancer Foundation has awarded $183,193 through 6 sun safety grants to 3 organizations, including:

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
City of Portland - Public Health	Sun Safety at Casco Bay	2016	$5,000	Sun Safety	Portland	ME
Dempsey Center	Sun Safe on the Slopes	2016	$5,750	Sun Safety	Lewiston	ME

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
City of Portland - Public Health	Sun Safety at the Portland Sea Dogs	2017	$20,000	Sun Safety	Portland	ME
Impact Melanoma	Practice Safe Skin – Maine	2018	$78,543	Sun Safety	Concord	MA
Impact Melanoma	Reducing the Burden of Skin Cancer for Maine Residents	2020	$20,000	Sun Safety	Concord	MA
Impact Melanoma	Sunscreen at Maine State Parks	2021	$53,900	Sun Safety	Concord	MA

Grant Results

The sun safety grants provided by MCF from 2016-2021 resulted in several positive outcomes for grantees, Maine's communities and those at risk of developing skin cancer. A summary of some of these outcomes is provided below.

- 1,687,080 individuals were included in the target population of these grants.
- All 6 grants involved building new or expanding partnerships with outside organizations, resulting in 91 additional or expanded partnerships.
- All 6 grants included training for dispenser site staff and/or skin care and beauty professionals.
- 186 sunscreen dispensers have been installed.
- 183 staff have been trained at the dispenser sites.
- 5 of the projects facilitated outreach and media advertising events, for a total of 38 events.
- 5,174 individuals in the target population participated in at least one educational session.
- 186 sunscreen dispensers have been installed.
- Over 167 cases of sunscreen were used.

It is estimated that because of sun safety grantee efforts, as many as 166,714 individuals were able to apply at least one application of sunscreen over the course of these grants. The per application cost is estimated to be $0.15.

Impact of MCF Grants

Skin cancer results primarily from exposure to ultraviolet radiation from the sun. Both acute and long-term exposure can induce the mechanisms which cause cancer to develop. Exposure can be reduced by limiting time outdoors or by wearing clothing and sunscreen. Daily use of sunscreen has been demonstrated to reduce the incidence of skin cancers in fair-skinned population. However, long-term medical follow-up is critical to assessing the effectiveness of a sunscreen-based intervention.

To the best of our knowledge, no peer-reviewed studies have examined the benefit of sunscreen dispensers or the measured the impact of dispensers on increasing long-term sunscreen use. A research letter published in JAMA Dermatology in 2016 suggests that a decline in skin cancer incidence and mortality in New England may be tied to the region's strong cancer prevention programs, including Practice Safe Skin initiative, which involved funded sunscreen dispensers in public and recreational areas.[7] However, there is no research available to confirm this statement.

The lack of research studies makes it difficult to quantify the impact of MCF grants in this area beyond the short-term increase in sunscreen usage. This analysis estimates the number of people who benefited from the sun safety grant activities. It focuses on the number of sunscreen applications provided by the installed dispensers and seeks to estimate the cost per application and what percentage of the population is being protected from sun exposure.

The results of the grant effectiveness analysis are tabulated below:

Table 8: Sun Safety Outcomes

Number of sunscreen dispensers installed	Cases of sunscreen used*	# of 1ml applications of sunscreen*	$ per 1ml application*
186	167	166,714	$0.15

** Two grantees did not provide data on cases of sunscreen used; unable to include in cost calculations.*

Results

Six grants have provided sunscreen 186 sunscreen dispensers to the public, consuming more than 167 bags of sunscreen for an estimated 166,714 1ml applications of sunscreen. The per application cost is estimated to be $0.15, which can be expected to decrease given the current funding status of this initiative. Assuming the entire target population had access to these dispensers, approximately 10% or 166,714 individuals could have used a single 1ml application. If the assumption is that each person used two 1ml applications, 5% or 79,954 people would have gotten an application of sunscreen.

In addition to the sunscreen dispensers, 5,174 individuals participated in educational sessions about sun safety, 91 partnerships with outside organizations were created or expanded, and 38 outreach events were facilitated.

Discussion

Results from the analysis of MCF sun safety grants are inconclusive. The grant activities were implemented successfully by grantees – installing public sunscreen dispensers, as well as providing education and outreach to employees who work in outdoor settings. However, the connection between these activities and sun safety outcomes is both difficult to measure and long term in nature.

Experts have suggested that strong cancer prevention programs may help to increase public awareness about skin cancer and help decrease cases of melanoma. Publicly available sunscreen dispensers may increase awareness of sunscreen and likely help create an environment where sunscreen use is the accepted norm. However, these outcomes are moderated by compliance with best-practice application of sunscreen, primarily applying it regularly and consistently when exposure to sun is occurring. The

results of this analysis do not provide evidence of compliance, limiting our ability to say that grantees are effectively addressing the risks of sun exposure and skin cancer in Maine.

Grantees addressing sun safety in Maine face several challenges. First, is the lack of a data collection and monitoring infrastructure to measure the number of people using the sunscreen and the number of applications per person. The use of sunscreen dispensers also does not guarantee that individuals will utilize the dispensers according to proper use guidelines – applying multiple times per day throughout the year when sun exposure is expected to occur. Second is the lack of an evidence-based link between sunscreen dispenser use and a reduction in cancer rates. Based on current research, supplying discretionary use sunscreen dispensers in public areas is not proven to have detectable effects on the incidence of skin cancer in a population.

The cost of the sunscreen is also quite high when analyzed against the total cost of the grants. The average grant-funded cost of each 1ml of sunscreen is $0.15. For reference, a 29 ml bottle of generic sunscreen can be purchased for as little as a dollar for a unit cost of $0.03 per ml. It is important to note that the cost of the grantee supplied sunscreen is coupled with educational efforts which raises the cost slightly. However, a more cost-effective way to supply sunscreen might be to purchase individually packaged sunscreen from a bulk retailer and distribute this sunscreen, along with comprehensive sun safety education, to those organizations and employers where people experience prolonged sun exposure. These populations would benefit most from regularly supplied sunscreen and education – much like the Australian program which supplied free sunscreen and education for five years in conjunction with medical skin screening to measure the outcome.

To assess the grantee's impact on skin cancer in Maine, better data and long-term follow-up are necessary. Some form of pre-/post-test data with a population that passes the dispensers every day would provide information about how the target population interacts with the dispensers. To make meaningful conclusions about the impact on skin cancer, a cancer screening initiative with the study population would be necessary. Without data about skin cancer in this population, it is impossible to state with any accuracy that the sunscreen dispensers are reducing the incidence rate.

Moving forward, Maine Cancer Foundation should assess sun safety grant proposals on their ability to educate the target population, increase awareness of sun safety/impact of skin cancer (and its impact on increasing likelihood to use sunscreen), and consistently supply and/or monitor sunscreen use over a longer-term period.

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8. General Operating Support

Background

General operating support funding is a category of grant funding that grant-funded organizations are increasingly reliant on. General operations are those functions which keep organizations running and able to fulfill their missions. Among the common general operations are asset building and development, institutional services, provision of assets and services, research, networking, community building, and individual economic assistance.[1] Internally, these are activities like payroll, financial management, human resources, and in many cases, hiring grant writers to secure additional funds for mission-oriented operations. Externally, general operations can include fundraising, advocacy work, and civic engagement.[1]

Maine Cancer Foundation has awarded **11 general operations grants** totaling **$380,000**.

General operations funding has increased organization capacity, allowed for restructuring and greater focus on programs, and has enabled grantees to generate additional funds through grants and fundraising.

General operations funding covers these types of activities that are vital to many organizations' daily function. Funding for specific outcomes such as increasing cancer screening rates or reducing tobacco use often does not finance the general operations activities. For grant-funded organizations to achieve their institutional missions and those of their funders, they must be able to keep the bedrock of their operations in working order. General funding allows organizations to keep their doors open and continue doing their work.

Summary of MCF Grants 2017-2019

Since 2017, Maine Cancer Foundation has made investments to support the general operations of organizations around Maine whose missions align closely with the Foundation's goals to reduce cancer incidence and mortality. Many of these organizations work to address multiple areas of cancer care and support for Maine residents. Several have additional grants in areas such as colorectal cancer screening, transportation, and patient navigation. The general operating funds allow these organizations to keep their administrative, financial, and other routine operations running smoothly as they focus on cancer care from multiple angles.

As part of Challenge Cancer 2020, Maine Cancer Foundation has awarded 11 general operations grants totaling $380,000 to 7 organizations, including:

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Beth C. Wright Cancer Resource Center	General Operating Support	2017	$15,000	General Operating	Ellsworth	ME

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Beth C. Wright Cancer Resource Center	General Operating Support	2018	$25,000	General Operating	Ellsworth	ME
Beth C. Wright Cancer Resource Center	General Operating Support	2019	$30,000	General Operating	Ellsworth	ME
Healthy Acadia	General Operating Support	2017	$50,000	General Operating	Ellsworth	ME
Healthy Acadia	General Operating Support	2018	$50,000	General Operating	Ellsworth	ME
Healthy Androscoggin / Central Maine Community Health	General Operating Support	2019	$50,000	General Operating	Lewiston	ME
Healthy Communities of the Capital Area	General Operating Support	2017	$50,000	General Operating	Gardiner	ME
Healthy Community Coalition of Greater Franklin County	General Operating Support	2017	$50,000	General Operating	Farmington	ME
Sarah's House of Maine	General Operating Support	2017	$10,000	General Operating	Holden	ME
Sarah's House of Maine	General Operating Support	2018	$25,000	General Operating	Holden	ME
Sarah's House of Maine	General Operating Support	2019	$25,000	General Operating	Holden	ME

The primary focus of general operations fund is supporting the various cancer care and support activities grantees are engaged in.

Grant Results

The general operations grants provided by MCF from 2017-2019 resulted in several positive outcomes for grantees and the communities they serve. Because the general operations activities differ for each grantee, they are evaluated individually below. Proposed goals from the grant applications are used as the progress metric for each grantee, and the midyear progress reports are treated as the supplied data.

Achieved Outcomes

- Increased fundraising capacity including diversification of organizational funding structures, securing additional funding for programming, and developing fundraising campaigns.

- Improved organization's Information Technology through new hardware and upgraded software infrastructures to assure HIPAA compliancy and enhanced security.
- Hired staff to improve infrastructure, including bookkeeper and development staff.
- Invested in staff and board development.
- Improved organizational outreach through development of marketing plans and increased awareness of services.
- Expanded programming related to chronic disease management, health and wellbeing for cancer patients, support groups for cancer patients, and cancer prevention.
- Improved and increased collaboration with other organizations.
- Underwent strategic planning efforts.
- Established a critical reserve of funds for public health programming.
- Expanded current cancer prevention and screening programming.
- Collaboration with three transportation programs to improve the allocation of transportation resources for residents in Hancock and Washington counties.
- Increased development capacity by hiring a full-time Development Director.
- Established a critical reserve of funds for public health programming.

Impact of MCF Grants

Discussion

Across the general operations grantees, grantees continue to achieve their organizational goals, due in part to the funds obtained from Maine Cancer Foundation. Grant funds support a wide array of activities and processes that are separate from the program-specific activities. Administrative, financial, and technological improvements are among the more common applications of the general operating funds. Improving these aspects of organizational operation is an integral component to sustaining the long-term viability of programs the grantees oversee.

A cost-effectiveness analysis was not conducted due to the unique ways each grantee implemented their funds and the impact those implementations had on the various programs at each organization. In addition, data were not available on the specifics of how the funding was used by each grantee. Shared metrics for future cost-effectiveness analyses could include infrastructure and awareness building activities, as well as tracking additional funding that may have been procured as a result of the additional capacity of the grantees.

While a traditional cost-effectiveness analysis is not possible, recipients of the 2018 funding reported many and varied outcomes. One grantee said that general operating funds allowed them to secure an additional $163,000 from other funding sources that was then utilized to support additional programs. Another grantee funded expansion of programs for diabetes management, chronic disease management, and Tai-chi classes, serving more than 600 people in one year across the three. A grantee that provides housing and transportation services to cancer patients has served 369 guests in a few short years and has continually expanded support for their guests thanks to MCF funding.

The impact of these general operations efforts is intertwined with the programmatic work grantees are doing to address cancer in Maine. It is difficult to parse out the effect on cancer incidence and mortality,

but it is reasonable to conclude that keeping these organizations open and even improving their operations is likely to positively impact the cancer outcomes. However, there is no presently available framework for assessing the per dollar contribution to incidence and mortality. A better assessment would focus on operational efficiency and performance. If the general funding ultimately improves both, the conclusion is that general funding has a net positive benefit.

References

1. Emerson, J., & Carttar, P. (2003). Money Matters: The Structure, Operations and Challenges of Nonprofit Funding. The Bridgespan Group, 1-80.

9. Cancer Research

Background

Investments in scientific research are crucial to the forward progress of cancer care. Research helps to drive bodies of knowledge and understanding regarding cancer that is integral to successfully treating existing cancer and preventing future cases. The primary focus of the research grants is advancing the edge of scientific and academic knowledge about cancer and the best medical practices for its treatment.

Maine Cancer Foundation has awarded **5 research grants** totaling **$1,050,784.**

This funded no-cost fluid and tissue access for researchers, a successful PCRI shared decision-making program for lung screening, a telemedicine program, and ongoing EHR database consolidation and a breast cancer diagnostic trial.

Summary of MCF Grants 2015-2020

Since 2015, Maine Cancer Foundation has made investments in organizations around Maine with the goal of advancing research efforts related to cancer care.

Maine Cancer Foundation has awarded $1,050,784 through 5 research grants to 4 organizations, including:

Organization	Project Title	Year Issued	Amount	Category	Grantee Location	
Eastern Maine Medical Center Cancer Care	Creating a statewide tissue banking network to promote cancer research	2015	$199,940	Research	Bangor	ME
Maine Medical Center Research Institute	Creating a Centralized Biospecimen Resource for Cancer Research	2015	$199,830	Research	Scarborough	ME
Maine Medical Center Research Institute	Tumor Registry Electronic Medical Record Linked Data Resource: TREMR	2015	$191,230	Research	Scarborough	ME
Maine Dartmouth Family Medicine Residency	Structured care for individuals at risk for familial cancer syndromes	2015	$84,784	Research	Augusta	ME
University of New England	Methods and Diagnostics for Cancer Detection and Treatment Monitoring	2017	$375,000	Breast Cancer Screening	Portland	ME

Impact of MCF Cancer Research Grants

Each of the five grantees that concluded their research has successfully met their stated objectives and outcomes. The grant exploring breast cancer is currently in the clinical trial phase, but the investigators expect promising results upon the study's conclusion.

As stated previously, due to the lack of measurable outcomes and data from grantees, it is difficult to measure the effectiveness of MCF grant-making in this area. In the future, more data may become available that would allow a more quantitative analysis of the impact of the research grants.

Qualitatively, the investments in the research grants likely have significant long-term benefits for the field of cancer and prevention in Maine. The provision of no-cost fluid and tissue samples for cancer research, for example, reduces the cost barrier of carrying out research efforts. The successfully piloted PCRI method for LDCT screening shows promise for improving the shared decision-making process among patients at risk for lung cancer. Similarly, the remaining grantees contributed positive knowledge and outcomes to their fields of study. The net benefit of these efforts may be difficult to assess in the short-term, but over many years after they are implemented across the state, cost savings and reductions in cancer incidence and mortality are outcomes.

10. Hospice General Operations

Background

Cancer requires multiple types of medical care to manage symptoms, treat the disease, and ease suffering toward the end of a person's life. Hospice fulfills the latter and focuses on palliative care for those whose cancer is no longer being treated, are unlikely to be cured, or who have less than 6 months to live. Hospice care draws on multiple care disciplines to ease suffering and alleviate symptoms related to the cancer or previous treatments. Common types of care include nursing, home health, various types of therapy, and assistance with equipment. Hospice also addresses social needs including counseling, spiritual support, and social work assistance with end-of-life decisions.

Maine Cancer Foundation has awarded **12 hospice general operations grants** totaling **$108,819**.

Hospice grantees expanded their services to more clients, increase marketing and education efforts, hire and train more volunteers, and develop self-sustaining funding streams.

Collectively, hospice care aims to help people transition from treatment to a stage where they can live as fully as possible until their passing. This often means spending less time at the doctor's office and more time meeting personal goals and being with friends or family. In some cases, hospice care can even help an individual live longer by making them more comfortable. Given the importance of hospice in the spectrum of cancer care, Maine Cancer Foundation has invested heavily in hospice volunteer organizations across Maine to increase access to this critical service in underserved communities. The non-medical support to hospice patients and their families provided by Hospice Volunteer organizations is a critical complement to medical hospice care and enriches a patient's experience at end of life. Hospice Volunteer organizations coordinate this type of non-medical care that can include such services as caregiver respite, end of life preparations, grocery shopping, pet care, transportation to care, and so much more.

Summary

In partnership with funds from the John T. Gorman Foundation, Maine Cancer Foundation made significant investments in hospice volunteer organizations in 2018 and 2019.

Maine Cancer Foundation has awarded $108,819 through 12 grants to 6 organizations, including:

Organization	Project Title	Year Issued	Grant Amount	Grant Category	Grantee Location	
Down East Hospice Volunteers	General Operating Support	2018	$8,300	Hospice	Calais	ME

Organization	Project Title	Year Issued	Grant Amount	Grant Category	Grantee Location	
Down East Hospice Volunteers	General Operating Support	2019	$8,819	Hospice	Calais	ME
Hospice Volunteers of Hancock County	General Operating Support	2018	$5,000	Hospice	Ellsworth	ME
Hospice Volunteers of Hancock County	General Operating Support	2019	$10,000	Hospice	Ellsworth	ME
Hospice Volunteers of Somerset County	General Operating Support	2018	$6,700	Hospice	Skowhegan	ME
Hospice Volunteers of Somerset County	General Operating Support	2019	$10,000	Hospice	Skowhegan	ME
Hospice Volunteers of Waldo County	General Operating Support	2018	$10,000	Hospice	Belfast	ME
Hospice Volunteers of Waldo County	General Operating Support	2019	$10,000	Hospice	Belfast	ME
Hospice Volunteers of Waterville Area	General Operating Support	2018	$10,000	Hospice	Waterville	ME
Hospice Volunteers of Waterville Area	General Operating Support	2019	$10,000	Hospice	Waterville	ME
Pine Tree Hospice	General Operating Support	2018	$10,000	Hospice	Dover-Foxcroft	ME
Pine Tree Hospice	General Operating Support	2019	$10,000	Hospice	Dover-Foxcroft	ME

Grant Results

The hospice general operations grants provided by MCF in 2018 and 2019 resulted in several positive outcomes for grantees and the communities they serve. Proposed goals from the grant applications are used as the progress metric for each grantee, and the progress reports are treated as the supplied data.

Achieved Outcomes

- Expanded support group services through increased availability of space and hours allotted to group sessions.
- Increased number of clients served across hospice, bereavement, and child services
- Provided creative and non-mandated support in such forms as rides to oncology appointments, housing for out-of-town family, bedside vigils in the last hours of life, and bereavement groups.
- Increased the number of "End Stage" presentations explaining the necessity for early end of life care discussions with family and loved ones.
- Expanded bereavement program services by partnering with the local funeral home and utilizing grief counselors.
- Invested in office management staff to improve organizational efficiency.
- Increased the number of joint services delivered in collaboration with partnering agencies, leading to more comprehensive awareness among shared clientele.
- Enhanced community programs to better fit the needs of the serviced communities.
- Professional development for staff to attend trainings.
- Recruitment efforts for hospice volunteers in the community.

Impact

Relative to investments in other grant sectors, Maine Cancer Foundation's total spending in hospice is smaller, but the impact is profound. Hospice programs that received funding are located in more rural places in Maine, places where both median and average income are lower, residents are more likely to be on public assistance, and access to critical medical care is reduced by financial and other logistical barriers.

MCF grant funds enabled the six grantees to continue serving their current number of clients and, in several cases, expand their client base. Using MCF funding, most grantees were able to recruit additional volunteers, hire more staff, and pay for needed training. This kind of capacity building is critical for smaller organizations in rural areas. Several grantees leveraged MCF funding to expand their marketing, education, and outreach efforts to increase their presence in the community. As a result of reaching more people, grantees successfully provided services to more clients. Overall, hospice grantee efforts have built new capacity and used it to improve client quality of life.

11. Genetic Screening

Background

Genomic sequencing can be used effectively to better understand cancer as a disease and develop targeted treatments for individual patients. Exploring the ways cancer develops and grows can provide important information about the genomic changes that underly the disease. A key hurdle to harnessing genomic sequencing and bioinformatics in the treatment of cancer is clinician training. Developing training standards and application guidelines is a key step toward increasing clinician confidence with interpreting genomic testing results. Increasing clinician confidence will lead to more frequent use of testing, better communication of results, and ultimately, better patient outcomes. The grant will be used to support oncology clinicians by enhancing their skills, knowledge, and confidence using genomic information to inform cancer care. This information will help clinicians identify and choose treatments that are likely to be more effective for a specific patient, improving quality of life and survival. Additionally, genomic testing can help clinicians identify when a patient may have an underlying hereditary cancer syndrome.

Maine Cancer Foundation has awarded **1 genetic screening grant** totaling **$199,891**.

To date, **more than 90%** of Maine medical oncologists have enrolled in the Initiative from all Maine cancer practices.

Summary

As part of its grantmaking efforts, Maine Cancer Foundation made a novel investment in in genetic screening efforts.

Maine Cancer Foundation has awarded $199,891 through 1 grant to the following organization:

Organization	Project Title	Year Issued	Grant Amount	Grant Category	Grantee Location	
The Jackson Laboratory	Developing an educational curriculum to support community oncology clinicians use of genomics in patient care	2019	$199,891	Genetic Screening	Bar Harbor	ME

Grant Results

The Maine Cancer Genomics Initiative (MCGI) is focused on increasing the capacity of community-based oncology clinicians to deliver genomically-informed cancer care to their patients. They are doing this by providing access to genomic tumor testing and supporting the appropriate use of testing through provider education. They want to ensure that the educational tools they develop meet the needs of MCGI clinicians,

including building knowledge, skills, and confidence to incorporate genomic information into their practices. They propose to develop and deliver resources monthly throughout the project (approximately 24 resources total) that are designed to support providers' confidence, skills, and knowledge associated with genomic tumor testing.

By doing this, they hope to help improve patient care by 1) supporting good communication between clinicians and patients about the benefits, limitations, and risks of genomic tumor testing and 2) increasing access to information that may impact treatment choices.

Short-term outcomes will include provider engagement in education materials and reported provider satisfaction. Long-term outcomes of MCGI include provider knowledge, confidence, and self-efficacy regarding genomic tumor testing, and the clinical use of genomic tumor testing; as well as patient uptake of MCGI research participation and reported satisfaction with tumor testing.

To date, they have enrolled more than 90% of Maine medical oncologists on the Initiative from all Maine cancer practices. Together with their staff, the oncologists will continue to benefit from the genomic education described in this proposal through already well established by us communication pathways with the providers.

Impact

By supporting clinicians' appropriate use of genomic information, MCGI will contribute to the Maine Cancer Foundation's mission of reducing cancer incidence and mortality. Genomic data will enable patient care teams to identify treatments and/or clinical trials that can prolong their patients' lives. And, for patients with an underlying hereditary syndrome, unaffected family members can be tested, closely screened and monitored in order prevent cancer or identify it at its earliest stage.

12. COVID-19 Response

Background

Maine Cancer Foundation has awarded 13 **COVID-19 Response grants** totaling **$93,000**.

COVID-19 grants provided by MCF provided in 2020 helped to address immediate needs of Maine cancer patients and the unique challenges introduced or heightened by COVID-19 pandemic. According to the Centers for Disease Control (CDC), cancer patients and cancer survivors are at increased risk for severe illness or death if they contract Covid-19 (cdc.gov, 2022). Due to this increased risk, many patients were unable to work and relied on support from other to provide them daily necessities during the onset of the pandemic and through 2021.

COVID-19 grant funds in were focused on addressing needs related to transportation, food insecurity, and other basic needs to assist patients with the many financial, health and safety obstacles posed by the pandemic.

Summary

During the height of the COVID-19 pandemic, Maine Cancer Foundation provided Covid-19 Response Grants to support cancer patients impacted by the pandemic.

Maine Cancer Foundation has awarded $93,000 through 13 grants to the following organization:

Organization	Project Title	Year Issued	Grant Amount	Grant Category	Grantee Location	
Beth C. Wright Cancer Resource Center	COVID-19 Response Grant	2020	$8,000	COVID-19	Ellsworth	ME
Cancer Resource Center of Western Maine	COVID-19 Response Grant	2020	$10,000	COVID-19	Norway	ME
Cary Medical Center / Brian's Ride Cancer Fund	COVID-19 Response Grant	2020	$5,000	COVID-19	Caribou	ME
Christine B. Foundation	COVID-19 Response Grant	2020	$5,000	COVID-19	Bangor	ME
Coastal Healthcare Alliance	COVID-19 Response Grant	2020	$10,000	COVID-19	Rockland	ME
Dean Snell Cancer Foundation	COVID-19 Response Grant	2020	$5,000	COVID-19	Brunswick	ME

Healthy Acadia	COVID-19 Response Grant	2020	$5,000	COVID-19	Ellsworth	ME
MaineGeneral Harold Alfond Center for Cancer Care	COVID-19 Response Grant	2020	$10,000	COVID-19	Augusta	ME
MaineHealth - Maine Medical Partners	COVID-19 Response Grant	2020	$5,000	COVID-19	Sanford	ME
MaineHealth Cancer Care Network	COVID-19 Response Grant	2020	$10,000	COVID-19	Scarborough	ME
Mid Coast Hospital	COVID-19 Response Grant	2020	$5,000	COVID-19	Brunswick	ME
Northern Light A.R. Gould Hospital	COVID-19 Response Grant	2020	$5,000	COVID-19	Presque Isle	ME
Northern Light Eastern Maine Medical Center	COVID-19 Response Grant	2020	$10,000	COVID-19	Bangor	ME

Grant Results

Maine Cancer Foundation provided funding to 10 organizations to help meet the immediate needs of Maine cancer patients and/or oncology providers who were been impacted by the COVID-19 pandemic. The grant funds were used to address food insecurity, fuel costs, social isolation, and other challenges faced by patients during the pandemic.

Achieved Outcomes

- Initiated or expanded food assistance programs for cancer patients across the state through several avenues (grocery gift cards, health meal kits, food bags, etc.)
- Provided financial relief in the form of gas cards, transportation, and lodging assistance for patients traveling to appointments and treatment.
- Fuel credits for patients were provided to prepare for winter heating costs.
- Increased access to telemedicine opportunities through smart tablets purchased; allowing caregivers/family members to be involved in discussion of treatment plans with providers.
- Expanded opportunities for social engagement and promote physical/mental health to reduce impact of social isolation during the pandemic.

References

1. Henley SJ, Dowling NF, Ahmad FB, Ellington TD, Wu M, Richardson LC. COVID-19 and other underlying causes of cancer deaths—United States, January 2018–July 2022. *MMWR* 2022.

Appendix A

Methodology

Outcome Metrics

The outcome metrics for MCF's grant-making activities were previously defined in the Challenge Cancer 2020 evaluation plan. MDR worked closely with Maine Cancer Foundation to review and refine the metrics at the start of the project based on the current circumstances of Challenge Cancer 2020 grantees and additional data that were available on grant activities. It is important to note that metrics that are not feasible to collect data on or measure due to the cost/level of effort required were retained in the final outcome list, despite the fact that they are not reported on.

In addition to the outcomes previously identified in the evaluation plan, MDR conducted a cost-effectiveness analysis (where possible) to quantify the effectiveness of MCF grant funding across the multiple areas of focus. This return on investment for MCF funding was calculated as the number of life years saved, costs saved, etc. per MCF grant dollar awarded.

Outcome Metrics

Transportation & Lodging

- Reduced barriers to care
- Expanded treatment options for patients
- # of life-years saved as a result of intervention
- What is the cost-effectiveness of MCF transportation funding?

Patient Navigation

- Financial/ economic assistance, health insurance navigation, transportation, social services, lodging
- Increased rate of recommended cancer screenings for patient panel
- Increased rate of patients screened that have never been screened before
- Increased rate of high-risk patients screened
- Higher rate of early detection
- Reduced barriers to screening and care
- Improved quality of life and wellbeing of patients
- More early diagnoses/decreased % of late-stage diagnoses
- Increased workflow effectiveness
- # of life-years saved as a result of intervention
- What is the cost-effectiveness of MCF patient navigation funding?

Tobacco

- Increased number of tobacco users who successfully quit
- Decreased tobacco and other nicotine delivery systems use
- Reduced number of youth who initiate tobacco and other nicotine delivery systems use

- Decreased exposure to secondhand smoke
- Increased access to smoke-free housing options for low-income renters
- Reduction in tobacco-related cancers
- # of life-years saved as a result of intervention
- What is the cost-effectiveness of MCF tobacco funding?

Colorectal Cancer Screening

- Increased rate of recommended cancer screenings for patient panel
- Increased rate of patients screened that have never been screened before
- Increased rate of high-risk patients screened
- Higher rate of early detection
- Decreased % of late-stage diagnoses
- Increased adoption of genetic counseling
- Reduce barriers to screening and care
- Expand treatment options for patients after early detection
- Reduction in CRC rates
- What is the cost-effectiveness of MCF CRC funding?
- # of life-years saved as a result of intervention

Lung Cancer Screening

- Increased rate of patients screened that have never been screened before
- Increased rate of high-risk patients screened
- Higher rate of early detection
- Decreased % of Late-Stage Diagnoses
- Increased Use of Low-Dose CT scans
- Increased rate of smoking cessation program utilization cooccurring with screening
- Reduced barriers to screening and care
- Expanded access to and utilization of specialty care services for patients after early detection
- Reduction in lung cancer rates
- # of life-years saved as a result of intervention
- Increased provider knowledge and use of LDCT
- What is the cost-effectiveness of MCF lung cancer screening funding?

General Operating

- What is the cost-effectiveness of MCF general operations funding?
- How has general operations funding improved Maine's cancer system?

Human Papilloma Virus (HPV) Vaccinations

- Increased rate of patients receiving HPV vaccinations
- Reduction in HPV-related cancers
- # of life-years saved as a result of HPV vaccination interventions
- What is the cost-effectiveness of MCF HPV vaccinations funding?

Sun Safety

- Increased rate of patients receiving skin cancer screenings
- Higher rate of early detection
- Decreased % of Late-Stage Diagnoses
- Reduction in skin cancer rates
- # of life-years saved as a result of sun safety interventions
- What is the cost-effectiveness of MCF sun safety funding?

Note that actual grant activities do not necessarily cover all outcomes listed above. Grantees may have only worked on some of the outcomes. In addition, it may not be feasible to collect data or estimate some outcomes, such as reduction in cancer incidence rates.

Data Collection

In collaboration with Maine Cancer Foundation, MDR developed a survey instrument to facilitate data collection. The survey was designed and programmed to ask questions that are relevant to each grant type; questions were based on the activities and outcomes specific to that area's logic model. The goal was to collect information from grantees on their actions and outcomes, using the logic model to estimate longer-term outcomes based on the established evidence-based literature that each set of programs was based on.

All surveys were completed on MDR's Voxco survey software. MDR sent a link to the survey via email to 59 grantees and followed up with those who did not provide information within four weeks. Data collection took place from November 2021 through February 2022. A total of 46 grantees completed the survey.

To supplement survey data collection, Maine Cancer Foundation provided MDR with all previous evaluation data and documentation that was collected. The data that grantees provide related to their activities (such as the number of patients that received colorectal cancer screening as a result of the intervention) to be used in the analysis to estimate or model impact and cost-effectiveness.

Summary of Data Collection Results Among Grantees

Area	Total Grants (2015-2021)	Responding Grants 2021*
Transportation & Lodging	57	16
Patient Navigation	16	7
Tobacco	25	10
Colorectal Cancer Screening	25	9
Lung Cancer Screening	7	2
General Operating Support	11	N/A
HPV Vaccinations	2	0
Sun Safety	6	2
Research	5	N/A
Genetic Screening	1	N/A
Hospice General Operating Support	12	N/A
Miscellaneous	19	N/A

**Grantees whose projects were still active at time of data collection were asked to complete a 2021 survey. Since many grant projects have already been completed, their reporting is finalized and they were not required to complete a survey again in 2021.*

Analysis

The analysis combined the primary data collected from grantees and information from published literature on the outcomes and cost effectiveness of MCF's evidence-based activities. By combining expected outcomes with data on program activities and reported outcomes, MDR calculated the impact and effectiveness of each grant submitting data in addition to measuring the overall impact of MCF funding.

Cost-effectiveness analysis provides a tool to weigh and synthesize benefits, harms, and costs of interventions and thus can inform the decision process for adopting population screening. Cost-effectiveness analysis cannot determine which the optimal intervention is, but rather which intervention will provide the greatest health benefits, given the decision maker's willingness to pay for a unit of benefit.

Two types of cost-effectiveness ratios are often reported in the literature: 1) a cost-effectiveness ratio comparing each intervention strategy to the standard of care, often a "no intervention" scenario; and 2) an incremental cost-effectiveness ratio comparing each strategy with the next most effective alternative, which may or may not be a "no intervention" scenario. The grants funded by MCF increase access, screening, etc. among those who would otherwise not have access to high-quality cancer care. Therefore, the cost-effectiveness analysis conducted by MDR compared grant activities against a "no intervention" scenario (where applicable). That is, we compared the results of the grant-funded interventions to a scenario where the grants were not provided (i.e., no intervention).

Where possible, MDR looked at a basic cost-effectiveness model that examines the number of life years saved compared to the amount of grant funding received. In cases where life years cannot be estimated, other cost-effectiveness metrics were developed and reported to assess the impact and relative cost-benefit of the grant funding.

Limitations

The data and results presented in this report are subject to limitations. Note that many of these MCF grants have been recently awarded and are ongoing, meaning that outcomes for many grantees are not yet available. Additional data will need to be collected from these grantees in the future to create a more comprehensive and complete picture of MCF grant funding. Given the long-term nature of cancer prevention programs, it will likely be many years before all the benefits of MCF funding will be seen.

Also note that there are gaps in the data presented in this report where grantees chose not to follow-up with our additional requests. Missing data are minimal in some areas (colorectal cancer screening) but significantly in others (tobacco prevention and cessation) Therefore, the results of MCFs grant-making activities presented here are likely underrepresented due to this non-response. It also limits our ability to extrapolate the results – meaning that MCF's grants likely had more impact than what the data suggest here.

Appendix B

Complete Grant List

Cancer Screening						
Organization	**Project Title**	**Year Issued**	**Amount**	**Category**	**Grantee Location**	
Cary Medical Center	Screen Aroostook	2018	$98,516	CRC Screening	Caribou	ME
City of Portland, Minority Health Program	Colorectal Cancer Screening for Vulnerable Populations	2017	$100,000	CRC Screening	Portland	ME
Harrington Family Health Center	Increase Colorectal Screening through the reduction in FIT Test Barriers and Increased Community Education	2019	$100,000	CRC Screening	Harrington	ME
Healthy Acadia	Downeast Colorectal Cancer Screening Initiative	2019	$100,000	CRC Screening	Machias	ME
Healthy Androscoggin	Colon Health Rx: Cancer Screening in Lewiston's Immigrant Community	2018	$93,051	CRC Screening	Lewiston	ME
Healthy Community Coalition of Greater Franklin County	One-by-One-Colorectal Cancer Screening and Navigation	2017	$99,832	CRC Screening	Farmington	ME
Islands Community Medical Services	Increasing Cancer Screenings at ICMS	2020	$100,000	CRC Screening	Vinalhaven	ME

LincolnHealth	Strategy for Identification and Screening of Unscreened Patients at LincolnHealth	2016	$29,235	CRC Screening	Damariscotta	ME
Maine Access Immigrant Network	Colorectal Cancer Prevention and Screening Outreach and Education in MAIN's Communities	2019	$45,906	CRC Screening	Portland	ME
Maine Primary Care Association	Colorectal Cancer Screening Project	2021	$20,000	CRC Screening	Augusta	ME
MaineGeneral Medical Center	Expansion of the Role of Community Health Workers to Increase Colon Cancer Screening Rates	2016	$29,937	CRC Screening	Waterville	ME
MaineGeneral Medical Center	80% Colon Cancer Screening Project	2017	$99,627	CRC Screening	Waterville	ME
MaineGeneral Medical Center	Mobilizing CHWs to increase access for high-risk patients due for surveillance colonoscopy screening	2019	$96,629	CRC Screening	Augusta	ME
MaineHealth – Maine Medical Center	Building Capacity at MaineHealth to Enhance Colorectal Cancer Screening	2016	$28,863	CRC Screening	Scarborough	ME
MaineHealth DBA Maine Medical Center	Cancer Genetic ECHO: Extending Genetic Services to Maine's Colorectal Cancer Patients and their At-Risk Family Members	2020	$89,055	CRC Screening	Portland	ME

Midcoast Hospital	Developing Systems to Increase Colorectal Screening Rates through Patient Identification	2016	$29,848	CRC Screening	Brunswick	ME
Mount Desert Island Hospital	Increase Colorectal Screenings and Ensure Compliance in a Targeted Subset of Patients	2016	$7,481	CRC Screening	Bar Harbor	ME
Northern Light A.R. Gould Hospital	Removing Stigma and Barriers: Increasing Colorectal Screenings in Aroostook County	2020	$70,710	CRC Screening	Presque Isle	ME
Pen Bay Medical Center	Screen to Save - Knox County	2018	$32,055	CRC Screening	Rockland	ME
Penobscot Community Health Care	Provider Reminder and Recall System for Colorectal Cancer Screening	2016	$30,000	CRC Screening	Bangor	ME
Penobscot Community Health Center	Expanding Systems to Increase Colorectal Cancer Screening through Patient Outreach and Recall	2016	$100,000	CRC Screening	Bangor	ME
Penobscot Community Health Care	Improving Colorectal Screening Rates via Use of a Medical Support Assistant	2018	$100,000	CRC Screening	Bangor	ME
Penobscot Community Health Care	Improving Colorectal Screening Rates via Community Support Workers	2019	$100,000	CRC Screening	Bangor	ME
Sebasticook Valley Health	Outreach, education, and Navigation Program to Increase Colorectal Cancer Screenings	2018	$85,791	CRC Screening	Pittsfield	ME

Waldo County General Hospital	Waldo Screen to Save	2017	$44,566	CRC Screening	Rockland	ME
Cary Medical Center	Screen Aroostook for Lung Cancer	2021	$40,000	Cancer Screening	Caribou	ME
Maine Medical Center	Maine Lung Cancer Coalition (formerly The Maine LungCAPS Initiative)	2016	$400,000	Lung Cancer Screening	Scarborough	ME
Maine Medical Center Research Institute	Integrating personalized risk information in Low-Dose CT screening for lung cancer	2015	$100,000	Lung Cancer Screening	Scarborough	ME
Maine Medical Center	Maine Primary Care Provider Lung Cancer Screening Survey	2018	$3,674	Lung Cancer Screening	Scarborough	ME
Maine Medical Center	Dissemination and Implementation of New Lung Cancer Screening Guidelines	2021	$39,979	Cancer Screening	Portland	ME
MaineHealth dba Coastal Healthcare Alliance	Coastal Healthcare Alliance Comprehensive Lung Cancer Screening Program	2021	$39,650	Cancer Screening	Rockport	ME
St. Joseph Hospital - Community Care Partnership of Maine	Lung Cancer Prevention and Early Detection Project	2021	$39,946	Cancer Screening	Bangor	ME
Transportation						
Organization	**Project Title**	**Year Issued**	**Amount**	**Category**	**Grantee Location**	
Angel Flight Northeast	Changing Lives One Flight at a Time	2018	$30,000	Transportation	North Andover	MA

Angel Flight of New England	Changing Lives One Flight at a Time	2020	$40,000	Transportation	North Andover	MA
Beth C. Wright Cancer Resource Center	Access to Cancer Treatment	2015	$7,000	Transportation	Ellsworth	ME
Beth C. Wright Cancer Resource Center	Access to Cancer Treatment	2016	$15,000	Transportation	Ellsworth	ME
Beth C. Wright Cancer Resource Center	Access To Cancer Treatment	2017	$50,000	Transportation	Ellsworth	ME
Beth C. Wright Cancer Resource Center	Access To Cancer Treatment	2017	$7,500	Transportation	Ellsworth	ME
Beth C. Wright Cancer Resource Center	Access To Cancer Treatment	2019	$60,000	Transportation	Ellsworth	ME
Brian's Ride Cancer Fund	Transportation and Lodging Assistance for Cancer Patients	2018	$40,000	Transportation	Caribou	ME
Brian's Ride Cancer Fund	Transportation and Lodging Assistance for Cancer Patients	2020	$40,000	Transportation	Caribou	ME
Cancer Resource Center of Western Maine	Access to Cancer Care through Transportation	2018	$10,000	Transportation	Norway	ME
Cancer Resource Center of Western Maine	Transportation and Lodging Grant for Cancer Patients in Western Maine	2019	$30,000	Transportation	Norway	ME

Community Concepts	Transportation	2015	$10,000	Transportation	Lewiston	ME
Community Concepts	Transportation	2016	$15,000	Transportation	Lewiston	ME
Community Concepts	The Cancer Patient Transportation Project	2017	$50,000	Transportation	Lewiston	ME
Community Concepts	Community Concepts Transportation for Cancer Patients	2019	$60,000	Transportation	Lewiston	ME
Dean Snell Cancer Foundation	Patient Transportation Assistance Program	2015	$10,000	Transportation	Brunswick	ME
Dean Snell Cancer Foundation	Patient Transportation Assistance Program	2016	$15,000	Transportation	Brunswick	ME
Dean Snell Cancer Foundation	Patient Transportation Program	2017	$45,000	Transportation	Brunswick	ME
Dean Snell Cancer Foundation	Patient Transportation Program	2017	$7,500	Transportation	Brunswick	ME
Dean Snell Cancer Foundation	Patient Transportation and Lodging Program	2019	$60,000	Transportation	Brunswick	ME
Dempsey Center	The Maine Fund for Cancer Patients	2015	$4,000	Transportation	Lewiston	ME
Dempsey Center	The Maine Fund for Cancer Patients	2016	$4,000	Transportation	Lewiston	ME
Downeast Community Partners	DCP Rides for a Cure	2017	$50,000	Transportation	Ellsworth	ME

Downeast Community Partners	DCP Rides for a Cure	2019	$60,000	Transport ation	Ellsworth	ME
Downeast Community Partners	Transportation	2016	$12,000	Transport ation	Ellsworth	ME
Edgar J. (Guy) Paradis Cancer Fund	Support for Transportation to and from Cancer Services for St. John Valley Residents	2020	$40,000	Transport ation	Fort Kent	ME
Friends in Action	Cancer Patient Transportation	2020	$20,000	Transport ation	Ellsworth	ME
Friends in Action	Friends in Action transportation	2018	$30,000	Transport ation	Ellsworth	ME
Hospitality Homes	Hospitality Homes Maine Boston Network	2017	$38,000	Transport ation	Boston	MA
Hospitality Homes	Ensuring Free Lodging and Transportation for Maine Cancer Patients Seeking Care in Boston	2019	$60,000	Transport ation	Boston	MA
Kennebec Valley Community Action Program	KVCAP Cancer Transportation Project	2017	$50,000	Transport ation	Waterville	ME
Kennebec Valley Community Action Program	Transportation for cancer related services	2019	$50,000	Transport ation	Waterville	ME
Lake Region Senior Service	Healthcare Access Program	2015	$10,000	Transport ation	Bridgton	ME

Lake Region Senior Service	Healthcare Access Program	2016	$15,000	Transportation	Bridgton	ME
Lake Region Senior Service	Cancer Patient Transportation	2017	$36,000	Transportation	Bridgton	ME
Lake Region Senior Service	Cancer Patient Transportation	2017	$7,500	Transportation	Bridgton	ME
Lake Region Senior Services	Cancer Patient Transportation Program	2019	$38,570	Transportation	Bridgton	ME
Northern Light AR Gould Cancer Care	RideLink: Supporting Cancer Patient Transportation and Wellbeing	2020	$40,000	Transportation	Presque Isle	ME
Northern Light Eastern Maine Medical Center	Creating a Systematic Approach to Transportation and Lodging Assistance for Rural Cancer Care Patients	2020	$40,000	Transportation	Bangor	ME
Northern Light Mercy Hospital	Piloting Uber Health as a Resource to Provide Reliable Transportation for Cancer Patients in the Portland Area	2020	$16,560	Transportation	Portland	ME
MaineHealth DBA Maine Medical Center	Rideshare for Cancer Care	2019	$34,560	Transportation	Scarborough	ME
Passamaquoddy Tribe Pleasant Point Health Center	Pleasant Point Patient Assistance	2019	$45,840	Transportation	Perry	ME

Patient AirLift Services	Eliminating Transportation Barriers for Cancer Patients in Maine	2020	$40,000	Transportation	Farmingdale	NY
Patient Airlift Services	Eliminating Transportation Barriers for Patients in Maine	2018	$30,000	Transportation	Farmingdale	NY
Penquis CAP	Access to Cancer Care	2015	$10,000	Transportation	Bangor	ME
Penquis CAP	Access to Cancer Care	2016	$15,000	Transportation	Bangor	ME
Penquis CAP	Accessing Cancer Care	2017	$50,000	Transportation	Bangor	ME
Penquis CAP	Accessing Cancer Care	2017	$7,500	Transportation	Bangor	ME
Penquis CAP	Accessing Cancer Care	2019	$60,000	Transportation	Bangor	ME
Snell Foundation	Transportation & Lodging Assistance Program	2020	$10,000	Transportation	Biddeford	ME
The Boston House	Access for Maine Children	2020	$40,000	Transportation	Brookline	MA
The Leukemia & Lymphoma Society	Other Medical Expenses	2018	$50,000	Transportation	Wellesley	MA
Waldo Community Action Partners	Collaboration for Cancer Care Transportation	2017	$49,966	Transportation	Belfast	ME
Waldo Community Action Partners	Midcoast Cancer Care Transportation Network	2019	$60,000	Transportation	Belfast	ME
York County Community Action Corporation	Connecting to Cancer Care	2015	$10,000	Transportation	Sanford	ME

York County Community Action Corporation	Connecting to Cancer Care	2017	$50,000	Transport ation	Sanford	ME
York County Community Action Corporation	Connecting to Cancer Care	2019	$60,000	Transport ation	Sanford	ME
Patient Navigation						
Organization	**Project Title**	**Year Issued**	**Amount**	**Category**	**Grantee Location**	
Aroostook Medical Center	Early Access Patient Navigator	2015	$164,000	Patient Navigator	Presque Isle	ME
Caring Connections/Bangor YMCA	Caring Connections Patient Navigator Position	2017	$110,386	Patient Navigator	Bangor	ME
Cary Medical Center	Navigating the Journey	2018	$161,557	Patient Navigator	Caribou	ME
Central Maine Medical Center	Lung Screening Navigator with Tracking and Reporting Software System	2017	$164,000	Patient Navigator	Lewiston	ME
Greater Portland Health	Patient navigator to reduce cancer incidence and mortality rates among minority populations	2018	$164,000	Patient Navigator	Portland	ME
Healthy Acadia	Downeast Cancer Patient Navigation	2016	$164,000	Patient Navigator	Ellsworth	ME
Healthy Acadia	Downeast Cancer Patient Navigation through Continuum of Care	2019	$111,368	Patient Navigator	Ellsworth	ME

Healthy Community Coalition of Greater Franklin County	Franklin's Navigator Program for Colorectal Cancer Screening	2015	$164,000	Patient Navigator	Farmington	ME
Katahdin Valley Health Center	KVHC Patient Navigator Project	2018	$164,000	Patient Navigator	Patten	ME
Maine Mobile Health Program	Maine Immigrant Patient navigation Project	2016	$138,725	Patient Navigator	Augusta	ME
MaineGeneral Medical Center	Reducing Barriers to Cancer Care for Low Income, Rural Residents	2017	$161,562	Patient Navigator	Augusta	ME
Mount Desert Island Hospital	Establishing a Patient Navigator Program at Mount Desert Island Hospital	2017	$161,614	Patient Navigator	Bar Harbor	ME
Pen Bay Medical Center	Pen Bay Medical Center, Patient Navigator Program	2017	$161,388	Patient Navigator	Rockland	ME
Penobscot Community Health Care	Eliminating Barriers to Cancer Screening through Use of Navigator Medical Assistants	2015	$164,000	Patient Navigator	Bangor	ME
Sebasticook Valley Health	Patient Navigation Outreach Program	2015	$137,248	Patient Navigator	Pittsfield	ME
Southern Maine Health Care	Ambulatory Nurse Navigator with emphasis on Lung Cancer	2016	$164,000	Patient Navigator	Biddeford	ME

HPV Vaccination						
Organization	**Project Title**	**Year Issued**	**Amount**	**Category**	**Grantee Location**	
Maine Quality Counts**	HPV Vaccination Learning Collaborative	2017	$264,201	HPV Vaccination	Manchester	ME
Maine Quality Counts	Maine HPV Project ECHO	2019	$91,916	HPV Vaccination	Manchester	ME
Tobacco						
Organization	**Project Title**	**Year Issued**	**Amount**	**Category**	**Grantee Location**	
Access Health	Midcoast Youth Tobacco Intervention	2015	$16,099	Tobacco	Brunswick	ME
Aroostook County Action Program	Tobacco Cessation for Aroostook County Adults	2019	$79,310	Tobacco	Houlton	ME
Breathe Easy Coalition of Maine, City of Portland	Addressing Disparities in Tobacco Use and Exposure through Policy and Environmental Change	2015	$74,101	Tobacco	Portland	ME
Down East AIDS Network and the Health Equity Alliance	LGBTQ Tobacco Equity Project	2015	$57,669	Tobacco	Ellsworth	ME
Healthy Acadia	Reducing Tobacco Use in Downeast Maine	2017	$75,477	Tobacco	Ellsworth	ME
Healthy Androscoggin	Tobacco Education and Cessation Support for Adults in Androscoggin Country	2017	$52,419	Tobacco Cessation	Lewiston	ME

Healthy Androscoggin	Preventing Youth Smoking Through Community Education: The Tobacco 21 Law	2018	$94,816	Tobacco	Lewiston	ME
Healthy Androscoggin	Tobacco Support Group	2019	$9,123	Tobacco	Lewiston	ME
Healthy Communities of the Capital Area	Reaching More Moms, their Friends and Family	2017	$25,000	Tobacco	Gardiner	ME
Healthy Community Coalition of Greater Franklin County	Tobacco Free Franklin (Two Year Request)	2015	$199,976	Tobacco	Farmington	ME
Kennebec Behavioral Health	KBH Clubhouse Tobacco Cessation Needs Assessment	2019	$7,500	Tobacco	Augusta	ME
Maine Public Health Association	MPHA Tobacco Coalition Cancer Prevention	2017	$10,000	Tobacco	Augusta	ME
Maine Public Health Association	Maine Tobacco Coalition for Cancer Prevention	2017	$99,264	Tobacco	Augusta	ME
Maine Public Health Association	Tobacco Prevention and Control Communications Project	2018	$94,275	Tobacco	Augusta	ME
MaineGeneral Medical Center	Engaging Rural, Low-Income Populations in Tobacco Cessation: A Community-Based Approach	2018	$91,959	Tobacco	Waterville	ME

MaineHealth – Center for Tobacco Independence	Building Capacity in Primary Care to Address Tobacco Dependence	2016	$50,000	Tobacco	Portland	ME
MaineHealth Care at Home	Tobacco Treatment Groups and Support	2019	$56,437	Tobacco	Saco	ME
MaineHealth - MaineHealth Cancer Care Network	Reducing tobacco use in oncology patients who continue to smoke while receiving treatment	2019	$71,398	Tobacco	Scarborough	ME
Mid Coast Hospital	Increasing Capacity to Provide Group Tobacco Treatment at Mid Coast Hospital	2018	$28,987	Tobacco	Brunswick	ME
New Mainers Public Health Initiative	Smoking Prevention Campaign for New Mainers	2019	$100,000	Tobacco	Lewiston	ME
Penobscot Bay YMCA/Knox County Community Health Coalition	Fresh Quit Knox County	2018	$90,307	Tobacco	Rockport	ME
Penobscot Community Health Care	Peer-Led Tobacco Cessation Training at Unlimited Solutions Clubhouse	2017	$26,116	Tobacco Cessation	Bangor	ME
Public Health Research Institute	Wetamawe (Tobacco)	2017	$100,000	Tobacco	Deer Isle	ME
Rinck Advertising	Youth Tobacco Prevention Campaign	2017	$750,000	Tobacco Prevention	Lewiston	ME

Waldo County General Hospital	Reducing Smoking Rates among Patients with COPD	2018	$96,240	Tobacco	Rockland	ME
Sun Safety						
Organization	**Project Title**	**Year Issued**	**Amount**	**Category**	**Grantee Location**	
City of Portland - Public Health	Sun Safety at Casco Bay	2016	$5,000	Sun Safety	Portland	ME
Dempsey Center	Sun Safe on the Slopes	2016	$5,750	Sun Safety	Lewiston	ME
City of Portland - Public Health	Sun Safety at the Portland Sea Dogs	2017	$20,000	Sun Safety	Portland	ME
Impact Melanoma	Practice Safe Skin – Maine	2018	$78,543	Sun Safety	Concord	MA
Impact Melanoma	Reducing the Burden of Skin Cancer for Maine Residents	2020	$20,000	Sun Safety	Concord	MA
Impact Melanoma	Sunscreen at Maine State Parks	2021	$53,900	Sun Safety	Concord	MA
General Operating Support						
Organization	**Project Title**	**Year Issued**	**Amount**	**Category**	**Grantee Location**	
Beth C. Wright Cancer Resource Center	General Operating Support	2017	$15,000	General Operating	Ellsworth	ME
Beth C. Wright Cancer Resource Center	General Operating Support	2018	$25,000	General Operating	Ellsworth	ME

Beth C. Wright Cancer Resource Center	General Operating Support	2019	$30,000	General Operating	Ellsworth	ME
Healthy Acadia	General Operating Support	2017	$50,000	General Operating	Ellsworth	ME
Healthy Acadia	General Operating Support	2018	$50,000	General Operating	Ellsworth	ME
Healthy Androscoggin / Central Maine Community Health	General Operating Support	2019	$50,000	General Operating	Lewiston	ME
Healthy Communities of the Capital Area	General Operating Support	2017	$50,000	General Operating	Gardiner	ME
Healthy Community Coalition of Greater Franklin County	General Operating Support	2017	$50,000	General Operating	Farmington	ME
Sarah's House of Maine	General Operating Support	2017	$10,000	General Operating	Holden	ME
Sarah's House of Maine	General Operating Support	2018	$25,000	General Operating	Holden	ME
Sarah's House of Maine	General Operating Support	2019	$25,000	General Operating	Holden	ME
Cancer Research						
Organization	**Project Title**	**Year Issued**	**Amount**	**Category**	**Grantee Location**	

Eastern Maine Medical Center Cancer Care	Creating a statewide tissue banking network to promote cancer research	2015	$199,940	Research	Bangor	ME
Maine Medical Center Research Institute	Creating a Centralized Biospecimen Resource for Cancer Research	2015	$199,830	Research	Scarborough	ME
Maine Medical Center Research Institute	Tumor Registry Electronic Medical Record Linked Data Resource: TREMR	2015	$191,230	Research	Scarborough	ME
Maine Dartmouth Family Medicine Residency	Structured care for individuals at risk for familial cancer syndromes	2015	$84,784	Research	Augusta	ME
University of New England	Methods and Diagnostics for Cancer Detection and Treatment Monitoring	2017	$375,000	Breast Cancer Screening	Portland	ME
Hospice						
Organization	**Project Title**	**Year Issued**	**Grant Amount**	**Grant Category**	**Grantee Location**	
Down East Hospice Volunteers	General Operating Support	2018	$8,300	Hospice	Calais	ME
Down East Hospice Volunteers	General Operating Support	2019	$8,819	Hospice	Calais	ME

Hospice Volunteers of Hancock County	General Operating Support	2018	$5,000	Hospice	Ellsworth	ME
Hospice Volunteers of Hancock County	General Operating Support	2019	$10,000	Hospice	Ellsworth	ME
Hospice Volunteers of Somerset County	General Operating Support	2018	$6,700	Hospice	Skowhegan	ME
Hospice Volunteers of Somerset County	General Operating Support	2019	$10,000	Hospice	Skowhegan	ME
Hospice Volunteers of Waldo County	General Operating Support	2018	$10,000	Hospice	Belfast	ME
Hospice Volunteers of Waldo County	General Operating Support	2019	$10,000	Hospice	Belfast	ME
Hospice Volunteers of Waterville Area	General Operating Support	2018	$10,000	Hospice	Waterville	ME
Hospice Volunteers of Waterville Area	General Operating Support	2019	$10,000	Hospice	Waterville	ME
Pine Tree Hospice	General Operating Support	2018	$10,000	Hospice	Dover-Foxcroft	ME

Pine Tree Hospice	General Operating Support	2019	$10,000	Hospice	Dover-Foxcroft	ME
Genetic Screening						
Organization	**Project Title**	**Year Issued**	**Grant Amount**	**Grant Category**	**Grantee Location**	
The Jackson Laboratory	Developing an educational curriculum to support community oncology clinicians use of genomics in patient care	2019	$199,891	Genetic Screening	Bar Harbor	ME
COVID-19						
Organization	**Project Title**	**Year Issued**	**Grant Amount**	**Grant Category**	**Grantee Location**	
Beth C. Wright Cancer Resource Center	COVID-19 Response Grant	2020	$8,000	COVID-19	Ellsworth	ME
Cancer Resource Center of Western Maine	COVID-19 Response Grant	2020	$10,000	COVID-19	Norway	ME
Cary Medical Center / Brian's Ride Cancer Fund	COVID-19 Response Grant	2020	$5,000	COVID-19	Caribou	ME
Christine B. Foundation	COVID-19 Response Grant	2020	$5,000	COVID-19	Bangor	ME
Coastal Healthcare Alliance	COVID-19 Response Grant	2020	$10,000	COVID-19	Rockland	ME
Dean Snell Cancer Foundation	COVID-19 Response Grant	2020	$5,000	COVID-19	Brunswick	ME

Healthy Acadia	COVID-19 Response Grant	2020	$5,000	COVID-19	Ellsworth	ME
MaineGeneral Harold Alfond Center for Cancer Care	COVID-19 Response Grant	2020	$10,000	COVID-19	Augusta	ME
MaineHealth - Maine Medical Partners	COVID-19 Response Grant	2020	$5,000	COVID-19	Sanford	ME
MaineHealth Cancer Care Network	COVID-19 Response Grant	2020	$10,000	COVID-19	Scarborough	ME
Mid Coast Hospital	COVID-19 Response Grant	2020	$5,000	COVID-19	Brunswick	ME
Northern Light A.R. Gould Hospital	COVID-19 Response Grant	2020	$5,000	COVID-19	Presque Isle	ME
Northern Light Eastern Maine Medical Center	COVID-19 Response Grant	2020	$10,000	COVID-19	Bangor	ME
Miscellaneous						
Organization	**Project Title**	**Year Issued**	**Grant Amount**	**Grant Category**	**Grantee Location**	
Bangor YMCA	Increased Wellness Opportunities to Those Affected by Cancer through LIVESTRONG at the Bangor YMCA	2018	$10,896	Miscellaneous	Bangor	ME

Beth C. Wright Cancer Resource Center	Charting a Course for Patient Navigation in Maine	2018	$2,308	Miscellaneous	Ellsworth	ME
Beth C. Wright Cancer Resource Center	The Healing Circle: Skills for Reclaiming Wholeness on the Cancer Journey	2019	$8,000	Miscellaneous	Ellsworth	ME
Beth C. Wright Cancer Resource Center	Virtual Support Group	2019	$9,800	Miscellaneous	Ellsworth	ME
Christine B. Foundation	Cancer Resource Center Collaborative	2019	$2,555	Miscellaneous	Brewer	ME
Dempsey Center	Sugarloaf Charity Summit	2018	$54,687	Miscellaneous	Lewiston	ME
Dempsey Center	Sugarloaf Charity Summit	2019	$63,410	Patient Support	Lewiston	ME
Environmental Health Strategy Center	Increase Testing for Arsenic-Contaminated Well Water	2017	$10,000	Environmental Factors	Augusta	ME
Maine Pharmacy Association	HPV Vaccination Continuous Learning Programming	2019	$2,269	Miscellaneous	Augusta	ME
MaineHealth – Let's Go Program	Obesity: Making the Connection to Cancer	2020	$2,500	Mini-Grant Obesity	Portland	ME
Martha B. Webber Breast Cancer Center	Sugarloaf Charity Summit	2015	$67,112	Miscellaneous	Farmington	ME
Martha B. Webber Breast Cancer Center	Sugarloaf Charity Summit	2016	$79,836	Miscellaneous	Farmington	ME

Martha B. Webber Breast Cancer Center	Sugarloaf Charity Summit	2017	$57,312	Miscellaneous	Farmington	ME
Martha B. Webber Breast Cancer Center	Sugarloaf Charity Summit	2018	$54,687	Miscellaneous	Farmington	ME
Martha B. Webber Breast Cancer Center	Sugarloaf Charity Summit	2019	$63,411	Patient Support	Farmington	ME
New Mainers Public Health Initiative	Community Education Workshops on Cancer for Refugees and Asylum Seekers	2018	$25,000	Miscellaneous	Lewiston	ME
Penobscot Community Health Care	Improving Patient Outcomes via Dermatology eConsult	2018	$12,174	Miscellaneous	Bangor	ME
Penquis CAP	Maine Regional Cancer Transportation Brochure	2018	$545	Miscellaneous	Bangor	ME