



PROGRESS UPDATE

The Pan-Mass Challenge

Fall 2016



Dana-Farber Cancer Institute has been the top ranked cancer hospital in New England by U.S. News and World Report for 16 consecutive years, and is the only cancer center in the country ranked in the top 4 for both adult and pediatric cancer programs.

2016 PAN-MASS CHALLENGE: THE POWER OF COMMITMENT TO PROPEL PROGRESS

It takes a team to conquer cancer, and for 37 years the Pan-Mass Challenge (PMC) and Dana-Farber Cancer Institute have strived tirelessly together toward this ambitious goal. Founded in 1980 by Executive Director Billy Starr, who was made an Institute Trustee in 1987, the PMC is the biggest athletic fundraising event in the nation and Dana-Farber's largest single contributor, raising \$547 million since the first ride. A model for fundraising efficiency, 100 percent of rider-raised dollars directly support Dana-Farber.

This success testifies to the unwavering commitment of PMC cyclists, volunteers, corporate sponsors, and individual contributors. Participants raise an average of \$7,500 per person, with rider retention rates standing at 78 percent. In 2016, 6,000 cyclists from 39 states and 6 countries chose to ride one of 12 routes, traveling between 25 and 192 miles. More than 4,000 passionate volunteers powered the success of this event by unloading cargo from trucks, organizing luggage, distributing water, and preparing meals. Approximately 600 riders and volunteers represent PMC Living Proof®.

Driven by this dedicated community of supporters, the PMC fuels the fight against cancer on multiple fronts through the millions of dollars raised for Dana-Farber's world-class research and care. Dana-Farber thanks you for your steadfast partnership in our shared cause to bring cures closer by the mile.



PMC COMMITMENT: FUELING THE FIGHT AGAINST CANCER

The PMC provides a catalyst for progress against cancer by generating funds that may be rapidly applied to Dana-Farber’s most pressing research and patient care initiatives. Every dollar raised makes a difference because these flexible resources are directed when and where they make the most impact.

Thanks to the PMC, our renowned scientists, clinicians, and caregivers are making significant strides in pursuit of cures and improved patient outcomes. They are advancing a new paradigm of treatment, focusing on the genetics of a patient’s cancer rather than its anatomical location. They are propelling innovative research aimed at translating the latest discoveries into novel therapeutic strategies. They are delivering personalized care and comprehensive services that address the full range of patient needs. And, they are setting increasingly ambitious standards for excellence, achievement and leadership.

As Dana-Farber’s scientific and clinical initiatives continue to grow, so too does the pivotal role of PMC support. Together with the PMC, Dana-Farber remains focused on building momentum toward realizing our shared vision of a world without cancer.



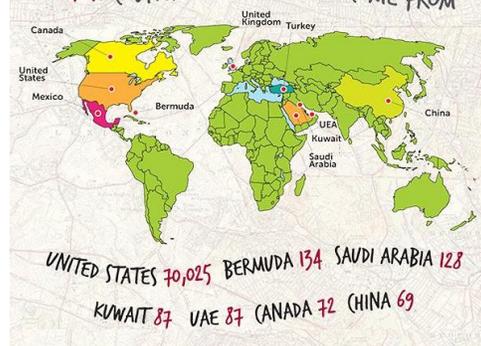
WHO ARE OUR PATIENTS?



PATIENT AGE AND GENDER

AGE	FEMALE	MALE	TOTAL
0-9	418	598	1,016
10-19	684	742	1,426
20-29	1,416	1,082	2,498
30-39	2,737	1,169	3,907
40-49	6,756	1,949	8,705
50-59	11,237	4,744	15,981
60-69	11,839	7,292	19,131
70-79	7,288	5,632	12,920
80+	2,901	2,333	5,234
TOTAL	45,276	25,541	70,818

TOP 10 COUNTRIES OUR PATIENTS COME FROM



Source: DART (Dana-Farber Analytics and Reporting Team)
 Data reflect number of unique patients who visited Longwood and satellite locations from Jan. 6, 2015, through Jan. 5, 2016.
 Information reflects data run on Jan. 7, 2016.

POWERED BY THE PMC: FLEXIBLE FUNDS MAKING PROGRESS POSSIBLE

 **Precision Medicine** – The PMC remains pivotal to Dana-Farber’s growth as a world leader in precision medicine, a therapeutic approach grounded in genomic analysis of a patient’s cancer. By leveraging PMC support, our physician-scientists are developing “smarter” drugs that are more targeted and have fewer side effects than conventional cancer treatments.

 **Innovative Research** – The PMC empowers Dana-Farber to advance an ambitious research agenda aimed at increasing scientific understanding of cancer, improving treatment strategies, and accelerating drug development. Propelled by PMC funding, Institute leaders are positioned to take strategic risks, plan ahead, and maximize the most promising opportunities for progress in pursuit of cures.

 **Total Patient Care** – The PMC provides funding for programs serving the full range of emotional, psychosocial, and spiritual needs of our patients and their families throughout treatment. By supporting services that are often not covered by insurance, the PMC bolsters Dana-Farber’s capacity to deliver expert, compassionate care without compromise.

 **Faculty Recruitment and Retention** – PMC support enables the Institute to attract and retain the highest caliber faculty, and recruit young, promising, innovative scientists and clinicians from around the globe to join our seasoned experts in elevating cancer care and research.



POWERED BY THE PMC: LEADERSHIP IN PRECISION MEDICINE

Fueled by PMC funding, Dana-Farber has emerged as a leader in cancer precision medicine, pioneering the use of genomic technologies in the clinic. Through initiatives such as *Profile*, these tools are paving the way for the development of more targeted cancer medicines. They may also help physicians to decide which patients are most likely to benefit from specific drugs based on their genetic profile.

Since its inception in 2011, more than 43,000 patients have consented to participate in *Profile*, and researchers have completed and analyzed genomic tests on 16,000 tumor specimens. *Profile* uses a technology platform called OncoPanel to sequence 300 different genomic areas within each patient's tumor DNA, yielding data that can be used to select cancer therapies for individual patients.

Building on the success of *Profile*, the Joint Center for Cancer Precision Medicine uses algorithms to process and interpret genomic data in order to determine how a cancer cell's underlying biology might lead to response or resistance to certain drugs. This information is being used to speed the development of personalized cancer therapies aimed at providing the right drug, for the right patient, at the right time.

PROFILE

OVERVIEW



GLOBAL LEADERSHIP

One of the broadest and most comprehensive patient-based cancer genomics projects in the world



DRIVER MUTATIONS

Patients can consent to have their tumor tissue analyzed for the presence of mutations and other cancer-causing abnormalities



PEDIATRIC PATIENTS

Expanded to pediatric cancer patients at Dana-Farber Cancer Institute and Boston Children's Hospital

NUMBERS



Approximately 43,000 patients have participated



Detects mutations in nearly 300 cancer-associated genes



Researchers have analyzed approximately 16,000 genomic profiles of patient tumors

Precision medicine is an emerging form of care in which physicians use genomic techniques to identify key mutations driving malignancy and then treat the patient with targeted therapy.

POWERED BY THE PMC: ACCELERATION OF SCIENTIFIC PROGRESS

PMC investment plays a critical role in fueling innovative research that might not otherwise move forward. As a result, Dana-Farber physician-scientists have made breakthroughs that have improved patient care across multiple forms of cancer. Examples of progress propelled by the PMC include:

 The **Center for Immuno-Oncology** at Dana-Farber Cancer Institute was launched in 2012 as a resource for investigators studying immunotherapy, with a six-person team responsible for three clinical trials open under its auspices. Today, the Center supports 25 clinical trials for multiple forms of cancers. For example, through the Center's work, the Food and Drug Administration approved the drug pembrolizumab for melanoma and the drug nivolumab for melanoma, non-small cell lung cancer, kidney cancer, and Hodgkin lymphoma. Translating the power of immunotherapies into the clinic has grown exponentially, and more importantly has introduced promising and durable treatments to patients.



 In 2015, researchers in the **Linde Family Program in Cancer Chemical Biology** published a landmark study in the prestigious journal *Science* in which they engineered a new class of drug prototypes that target cancer-promoting proteins previously considered “undruggable.” Because their methodology can be modified to target any protein in the cell, it paves the way for the development of medicines that can hit a wide range of cancer drug targets long considered unreachable by conventional drugs.



In a span of five weeks beginning in late October 2015,

the FDA approved five new cancer drugs in Dana-Farber-led clinical trials.

The approvals mark advances in the treatment of several major types of cancer, and most of the new drugs are the first of their kind to be approved.

POWERED BY THE PMC: TOTAL PATIENT CARE WITHOUT COMPROMISE

Dana-Farber's philosophy of "total patient care" is embodied through comprehensive programs and initiatives bolstered by funds from the PMC, including:

 The **Division of Patient and Family Programs and Services**, which offers a range of programs to help patients and their families cope with the impact of cancer and related diseases, including financial assistance, pro bono legal services, short-term accommodations, and local transportation.

 The **Pediatric Resource Program**, which provides immediate and critically-needed support through gift cards for gas, groceries, and food establishments, as well as assistance with medical and prescription co-pays.

 The **Adult Survivorship Program** and the **David B. Perini, Jr. Quality of Life Clinic** for pediatric patients, both of which disseminate information and provide guidance on the medical, emotional, and psychological challenges facing today's growing population of cancer survivors.



 A new initiative, called the **Serious Illness Care Program**, is designed to assure that patients have meaningful conversations with their clinicians about their values and goals so that they can receive the care they want. The Program includes an eight-question Serious Illness Conversation Guide, a training program, and systems change processes that provide a roadmap for comprehensive implementation.

Dana-Farber 2015 By the Numbers

396,541

infusion treatments and outpatient visits



752

active clinical trials

539

research fellows train in Dana-Farber labs and centers



232

Principal Investigators

60

cancer specialists named "Top Doctors"



42

Satellite centers

START!



Billy Starr organizes his friends to bike and raise money to combat cancer, marking the beginning of the PMC.

1980

1983

The PMC becomes The Jimmy Fund's largest fundraising event.

1984

Institute President Baruj Benacerraf, MD, receives the Nobel Prize for work that unveiled the genetic underpinnings of the human immune system.

The Sidney Farber Cancer Institute is renamed Dana-Farber Cancer Institute.



1993

The PMC had become the most successful cycling fundraiser in the world.

1990

1988

Dana-Farber introduces its Susan F. Smith Center for Women's Cancers program to reduce the incidence of cancers in women.

Two out of every three children who enter the Jimmy Fund Clinic are cured.

The bridge connecting the Richard A. and Susan F. Smith Research Laboratories to the Dana Building is dedicated as the Pan-Mass Challenge Bridge to Progress.

1997

1998



The national Lung Cancer Alliance presents Billy Starr with a lifetime achievement award.

2005

2006

Gleevec (imatinib) goes on the market. Many patients with chronic myelogenous leukemia experience success with this "smart" drug, which was pioneered at Dana-Farber.

The American Nurses Credentialing Center bestows Magnet designation on Dana-Farber, the highest honor in nursing care.

The 37th PMC ride raised a record \$47 million to fight cancer.

2016



PMC attained a milestone goal of raising \$500 million since 1980!

2015

Dana-Farber's new Yawkey Center for Cancer Care is dedicated.

2011



Closer by the mile!

The Longwood Center opens, expanding Dana-Farber's research footprint, and the FDA approves five new cancer drugs in Dana-Farber-led clinical trials.

Dana-Farber launches Profile, an ambitious research project screening cancer patients for mutations in known cancer genes, putting the Institute ahead of the national wave in precision medicine.

THE POWER OF PMC COMMITMENT: \$547 MILLION RAISED...AND COUNTING

With an astounding \$547 million raised since its inception in 1980, the PMC has enabled Dana-Farber to pursue excellence at every level and make unprecedented strides against cancer. As the Institute strives to surpass increasingly ambitious milestones in cancer research and treatment, our partnership with the PMC remains pivotal to these efforts. Strengthened by the incredible commitment and support of the PMC community, Dana-Farber is poised to accelerate the pace of progress in pursuit of cures.



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FOR MORE INFORMATION

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