



Cancer Survivorship: The Ultimate Moonshot Goal

Deborah K. Mayer, PhD, RN, AOCN FAAN

Director of Cancer Survivorship

Professor, School of Nursing

Blue Ribbon Panel Member

www.cancer.gov/brp



UNC
LINEBERGER



UNC
CANCER CARE

Objectives

- Describe the Cancer Moon Shot Purpose
- Summarize the Blue Ribbon Panel Recommendations

White House Cancer Moonshot Task Force Memo

1.28.16

- Accelerate our understanding of cancer and its prevention, early detection, treatment, and cure
- Improve patient access and care
- Support greater access to new research, data, and computational capabilities
- Encourage development of cancer treatments
- Identify and address any unnecessary regulatory barriers and consider ways to expedite administrative reforms
- Ensure optimal investment of federal resources
- Identify opportunities to develop public–private partnerships



White House Cancer Moonshot Task Force

- Chaired by VP Biden
- Executive Director Greg Simon
- The task force consists of the heads of the 18 executive branch departments, agencies, and offices listed below:
 - Department of Commerce
 - Department of Defense
 - Department of Energy
 - Department of Health and Human Services
 - Department of Veterans Affairs
 - Office of Management and Budget
 - Office of Science and Technology Policy
 - Domestic Policy Council
 - National Economic Council
 - Food and Drug Administration
 - National Cancer Institute
 - National Institutes of Health
 - National Science Foundation
 - Others as the President may designate



CANCER MOONSHOT

*I plan to do two things: **increase resources**-both private and public-to fight cancer, and break down silos and bring all the cancer fighters together, share information and **end cancer as we know it.***

Vice President Joe Biden 2/16

Blue Ribbon Panel Report

This report describes a set of consequential recommendations for accelerating cancer research to achieve the ambitious goal of making a decade's worth of cancer research progress in five years and to bring the most promising science and clinical developments to cancer patients in the near term.



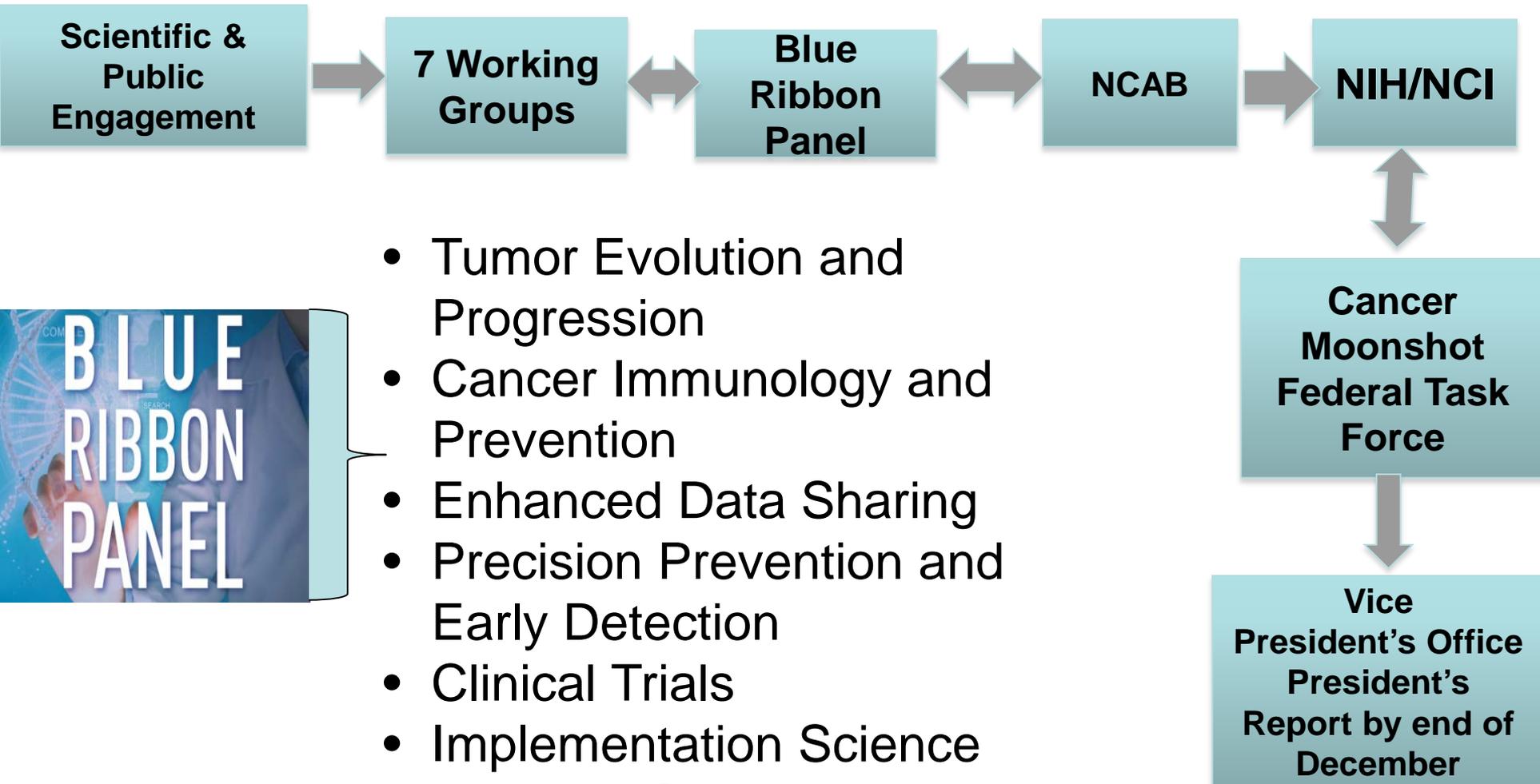
UNC
LINEBERGER

See www.cancer.gov/brp for full report



UNC
CANCER CARE

Structure & Process for Obtaining Input



Blue Ribbon Panel Working Groups

- Each Working Group had 12-15 members.
- In total almost 150 individuals were engaged in the Working Groups, including academic researchers, clinicians, industry representatives and advocates.
- Charge was to generate 2-3 recommendations of major scientific opportunities that are *poised for acceleration*.
- The Working Groups met almost weekly to discuss and formulate their recommendations

Summary of the Recommendations

A. Network for direct patient engagement.

- Enlist patients in federated network that includes patient tumor profiling data and “pre-registers” patients for clinical trials.

B. Cancer immunotherapy network.

- Organize networks to discover and evaluate novel immune-based approaches for pediatric and adult cancers, and eventually develop vaccines.

C. Therapeutic target identification to overcome drug resistance.

- Launch interdisciplinary studies to delineate mechanisms that lead cancer cells to become resistant to previously effective treatments.

D. Creation of a national cancer data ecosystem.

- Create an ecosystem to collect, share, and interconnect datasets.

Summary of the Recommendations

E. Fusion oncoproteins in pediatric cancer.

- Improve understanding of the abnormal fusion proteins that result from chromosomal translocations and drive many pediatric cancers.

F. Symptom management research.

- Support research to accelerate development of guidelines for management of patient-reported symptoms to improve quality of life and adherence to treatment regimens.

G. Precision prevention and early detection.

- Implementation of evidence-based approaches. Conduct implementation science research to encourage broader adoption of HPV vaccination, colorectal cancer screening, and tobacco cessation.

Summary of the Recommendations

H. Retrospective analysis of biospecimens from patients treated with standard of care.

- Analyze biopsies to learn which features predict outcome to better plan treatment for future patients.

I. Creation of human tumor atlas.

- Catalog the evolution of genetic lesions and cellular interactions in tumor/immune/other cells in tumor microenvironment from the earliest detected lesions to metastasis

J. Development of new enabling technologies.

- Support development of technologies to accelerate testing of therapies and tumor characterization.

Summary of the Demonstration Projects

Prevention: Lynch Syndrome

- A national effort to systematically screen all CRC and endometrial cancer patients for Lynch syndrome (LS)
- First degree relatives of patients with LS would be given the option to be screened and provided with genetic counseling

Therapy: Pediatric Cancer Immunotherapy Network

- A national pediatric immunotherapy clinical trials network to facilitate the testing of new immunotherapy approaches in childhood cancer
- Establish a robust research pipeline to advance pediatric immunotherapy

Emergent Technologies: Tumor Pharmacotyping

- Develop intra- and extra-tumoral technologies for determining the most effective therapeutic agents for individual patients

Cross-Cutting Themes

- **National network of patient biological and clinical data**
- **Prevention**
- **Health disparities research**
- **Development of biomarkers, technology and preclinical models**
- **Data sharing, analytics and predictive computational modeling**
- **Collaboration; public-private partnerships**

BRP Policy Issues for Task Force

- **Medical Coverage and Reimbursement**
- **Research Participants as Partners: Enhance Patient Engagement**
- **Delivery of Cancer Care in the Community**
- **Improve the Clinical Trials System**
- **Improve the Outcome for Children with Cancer**
- **Transform Federal Research Funding and Processes to Accelerate Progress**
- **Data Sharing**
- **Data Sharing Incentives for Insurers, Industry, Academia**

Scientific and Community Outreach Activities

Goal:

- Provide opportunities for the public and experts ways to submit ideas
- Increase the public's participation in the Cancer Moonshot

Approaches:

- Online public idea repository – over 1600 ideas submitted
- One-on-one public input: email
- BRP Listening sessions
- Professional conferences

Response:

- Over 1600 ideas received. All were ambitious and sincere.
- Invest in “on the cusp” breakthroughs.
- Share cancer research results broadly
- Make it easier to find and enroll in cancer clinical trials.
- Focus on survivors.
- Build on what works.



Graphical recording created at the Cancer Moonshot Summit on June 29, 2016. (Credit: StephScribes/White House Cancer Moonshot Task Force.)

On June 29, 2016, the Vice President convened nearly 400 cancer researchers, oncologists, nurses, patients, advocates and others at Howard University in Washington, D.C. Over 7,000 more came together at hospitals, community care centers, businesses, and in family rooms at more than 170 local summits across all 50 states, Puerto Rico, Guam, and Washington, D.C.

Timeline: Fall Announcements → Spring Reviews → Summer Funding

The Cancer Moonshot has brought the entire cancer community, industry, and patients and families together in a way that we haven't seen before. We are proud of the work generated by the BRP and its working groups and look forward to seeing these exciting and powerful recommendations implemented and putting our work in action.

Cancer Moonshot Task Force Report

10/17/19

Strategic Goals:

1. Catalyze New Scientific Breakthroughs
2. Unleash the Power of Data
3. Accelerate Bringing New Therapies to Patients
4. Strengthen Prevention and Diagnosis
5. Improve Patient Access and Care

https://www.whitehouse.gov/sites/default/files/docs/final_cancer_moonshot_task_force_report_1.pdf

Moonshot Task Force Report

Released 10/17/16

Federal Agencies

- ***Crowdsourcing Intellectual Property Data to Guide Cancer Investments*** (U.S. Patent and Trademark Office)
- ***Harnessing the Power of Artificial Intelligence to Improve Cancer and Disease Diagnosis*** (DoD)
- ***Improving Cancer Survivorship through Art*** (NEA)
- ***Partnership to Avoid Carcinogenic Risks by Reducing Radon Exposure*** (EPA)
- ***Preclinical Research Partnership to Evaluate the Potential of Particle Beam Radiotherapy*** (NASA/NCI)
- ***Promoting Human Papillomavirus (HPV) Vaccination as Cancer Prevention*** (CDC/ACS)
- ***Strengthening and Clarifying the Requirements for Public Availability of Clinical Trial Information*** (HHS/FDA)
- ***The Department of Defense Launching Groundbreaking Longitudinal Study to Revolutionize Precision Oncology*** (DoD)

Moonshot Task Force Report

Released 10/17/16

Private Sector

- **Atlanta's Global Center for Medical Innovation and T3 Labs** (diagnostics)
- **Blood Profiling Atlas Pilot** (open database of liquid biopsies)
- **Bristol-Myers Squibb Foundation** (\$25M/2 years to alleviate inequities)
- **Cancer 101** (Prescription to Learn® (P2L) to empower, inform and engage 100,000 pts/caregivers)
- **Cancer Support Community** (Host conference with others 1 year later to measure Moonshot progress)
- **CAVATICA & Seven Bridges** (interoperable data analysis platform for pediatric diseases)
- **Colon Cancer Prevention in the Neighborhood** (Medstar Washing Hospital to deliver education, risk assessments and screening for AA in Ward 5 over next year)
- **Contribute & Change (C2) Cancer Commons** (building biomedical data commons for systems to connect and share cancer data)
- **CosmosID, Inc. and the Immuno-Microbiome** (access to automated bioinformatics platform for 5 microbiome studies)
- **Deloitte** (launching the Cancer XPRIZE for early detection)
- **Demonstrating the Quality Assurance of Oncology Nurse Navigation** (HCA and AONN)

Moonshot Task Force Report

Released 10/17/16

Private Sector

- **Family Reach** (launch financial treatment project including planning, navigation, education)
- **Genentech** (35 translations of PRO-CTCAE by 2017)
- **Lazarex and Oncology Research Information Exchange Network (ORIEN)** (Improving Patient Access to Cancer Clinical Trials for minority & underserved)
- **Loglio Project** (imaging for low grade gliomas)
- **Lyft** (treatment transport in 200+ cities by 2020)
- **Making Patient Quality of Life an Active Research Priority** (THRIVE Network to reduce treatment effects)
- **Memorial Sloan Kettering Cancer Center** (launched the Integrated Mutation Profiling of Actionable Cancer Targets to Eliminate Disparities program)
- **Mercy Hospital Oklahoma City** (*doubling number of free mammograms to un-/underinsured*)
- **METAvivor** (commits to funding \$1 million in metastasis research grants in 2017 and doubling that amount in 2018)
- **National Minority Quality Forum (NMQF)** (releasing 1 cancer/month heat maps that identifies racial and ethnic disparities in cancer prevalence + national summit in 2017)

Moonshot Task Force Report

Released 10/17/16

Private Sector

- **NCI Cloud Collaborations with Amazon Web Services and Microsoft** (build a sustainable model for maintaining cancer genomic data in the cloud for use by cancer researchers through NCI's Genomic Data Commons (GDC) and Cancer Genomics Cloud (CGC) Pilots)
- **SHARE for Cures** (Launched System for Health And Research data Exchange platform)
- **Stanford Medicine/VA** (*Hadron Center particle beam proton and other ions*)
- **The Scarlett Fund for Memorial Sloan Kettering Cancer Center** (\$3M/5 years to advance pediatric precision oncology)
- **The American Psychological Association, Noetic, and The Ohio State University** (create a mental well-being and health intervention program to assist health care providers, patients, and family members to manage the trauma associated with a cancer diagnosis and to mitigate the potential for post-traumatic stress)
- **The Leukemia & Lymphoma Society (LLS)**(clinical trial will use advanced genomic analysis to identify genetic mutations and test several investigational, targeted drugs to develop a precision medicine approach to treat AML patients)
- **Uber** (\$5M in engineering resources to develop solutions that enable healthcare-related and non-emergency medical transportation in >500 cities by 2018)



JOURNEY OF HOPE