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MENTHOL BAN HAS BEEN A NO-BRAINER FOR DECADES— WILL IT FINALLY HAPPEN?

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GUEST EDITORIAL

Menthol ban has been a no-brainer for decades—will it finally happen?

Mainstream tobacco control advocates are celebrating the recent announcement that the Food and Drug Administration is poised to restrict the manufacture and sale of mentholated cigarettes and cigars.

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Making national and international headlines, the messaging related to the long-awaited decision is that the FDA is “taking urgent action to reduce tobacco addiction and curb deaths.” Clearly, urgency is in the eye of the beholder.

For more than a decade, the leadership of the National Association for African American Tobacco Network and other tobacco control experts have

been pushing for the FDA to act on menthol cigarettes.

Indeed, the urgent efforts being taken now by the FDA are the direct result of a lawsuit filed in 2020 by the African American Tobacco Control Leadership Council, Action on Smoking and Health, the American Medical Association, and the National Medical Association, to name just a few of the plaintiffs.

The basis of the lawsuit was the failure of the agency to act on the large body of research on the negative consequences

associated with menthol cigarettes, especially in the Black community.

In our eyes, urgent action to reduce addiction and curb deaths would have been to ban menthol in 2009 when Congress passed the Family Smoking Prevention and Tobacco Control Act. The two legislative changes brought

give the FDA regulatory authority over the tobacco industry.

Urgency would also have also been demonstrated by banning menthol when the FDA concluded after a four-year period of scientific review that “removal of menthol cigarettes from the marketplace would benefit public health in the United States.”

That report from the FDA was issued in 2013. Now, in 2021, the FDA announces that it is working toward product standards that *could* include a ban on menthol. If enacted, the ban would not take effect until 2024. Urgent action, indeed.

Why has it taken so long for the enactment of equitable and common sense public policy related to menthol flavoring?

Especially, given the experience of the menthol ban across Canada that did not lead to increased illicit menthol cigarette buying. The ban also appears to have resulted in people smoking less overall.

From a public health standpoint, no reasonable explanation exists for the FDA to allow menthol flavored tobacco products to remain on the market twelve years after banning all other characterizing flavors in cigarettes.

Nicotine addiction is an addiction of adolescence with the majority of smokers starting in their teens. Central to the rationale of the passage of the 2009 Family Smoking Prevention and Tobacco Control Act was the prevention of smoking initiation among adolescents and teens.

As argued, fruity flavored tobacco products such as cherry and bubble gum were specifically targeted to youth to increase interest and attractiveness in this demographic. To take liberties



about by that act of Congress were to ban the inclusion of all characterizing flavors in cigarettes *with the exemption of menthol flavoring* and to

with the words of Sojourner Truth, “Ain't menthol a flavor?”

A simple review of the data would have shown that the majority of adolescents who use nicotine containing products—both combustible cigarettes and vaping liquids—prefer a menthol flavoring.

Currently, mentholated brands of cigarettes enjoy the largest market share of all flavored tobacco products. Indeed, the most recent data suggest that more than half (54%) of youth aged 12-17 who smoke report use a mentholated brand of cigarette.

A health equity framing of the failure to ban menthol points to the enormous differences in preferences for menthol among youth of color. For example, 83% of African American youth who smoke use a mentholated brand. This same preference for mentholated cigarettes is observed among Black adults who smoke.

The disproportionate use of menthol products among Black smokers is by no means an accident. African American communities have been targeted by the tobacco industry for nearly 50 years with advertisements, free products, and discounted coupons.

In 2002, the family of Marie Evans successfully sued the Lorillard Tobacco Company, the maker of Newport cigarettes (also known by many as “the Black cigarette”), for giving free cigarettes to Black children in Boston.

Marie Evans started receiving free cigarettes at age 9 and died of lung cancer at age 54. The pernicious targeting of Black children by the tobacco industry continues. One study found that the cost of Newport cigarettes was significantly lower in convenient stores located near minority-serving high schools compared to other neighborhoods.

Further, while the majority of White youth have migrated away from com-

busible tobacco products to now highly regulated electronic nicotine delivery devices (i.e., e-cigarettes), Black youth prefer menthol flavored cigarillos which can be purchased in packs of three for 99 cents in low-income African American neighborhoods.

The most damning research associated with menthol are the findings linking mentholated tobacco products with higher levels of addiction and difficulty in quitting smoking. The negative consequences of being targeted with a highly addictive tobacco product are evident from the epidemiological data on Black smokers.

Smoking cessation rates among Black smokers has lagged significantly behind those of other racial/ethnic groups.

Black smokers have among the highest levels of smoking-related morbidity and mortality of any racial/ethnic group in the United States. For example, each year, approximately 17,000 Black Americans die of lung cancer. The annual loss of life associated with all tobacco-related disorders is 18% higher for Blacks than for whites.

Referred to as the Black smoking paradox, Black adults are more likely to develop and die from lung cancer than members of other racial/ethnic groups, despite smoking fewer cigarettes per day than members of other racial/ethnic groups.

As such, the lack of urgency in regulating menthol products is in effect, a lack of urgency in reducing Black tobacco addiction and curbing Black deaths.

Menthol regulation is not only a tobacco prevention and control issue, but a social justice imperative. Where are our urgent efforts needed? Increasing education in the Black community of the social justice issues associated with menthol cigarettes is imperative. Increasing access to evidence-based and culturally



From a public health standpoint, no reasonable explanation exists for the FDA to allow menthol flavored tobacco products to remain on the market twelve years after banning all other characterizing flavors in cigarettes.



appropriate smoking cessation interventions is essential.

Increasing provider knowledge about the increased risk for lung cancer for Black smokers at younger ages and with lower frequency smoking must be a priority. Establishing innovative approaches to engaging Black smokers in shared decision-making regarding lung cancer early detection screening must take place.

And lastly, recognizing the inadequacies of the current lung cancer screening guidelines for saving Black lives and calling for funding a new national lung cancer screening trial for low frequency menthol smokers must be a priority. (And if the FDA is indeed serious about the ban, that study should begin pronto.)

As the FDA continues urgent deliberations regarding the future of menthol products in the United States, the work by activities and scholars to prevent Black addiction and death will continue ... as if our very lives depended on it.



GUEST EDITORIAL

The unKOOL, unfiltered history of menthol cigarettes

Quick, what color is menthol?



By Alan Blum, MD

*Professor and Gerald Leon Wallace Endowed Chair in Family Medicine,
University of Alabama School of Medicine;
Director, Center for the Study of Tobacco and Society*

No, it's not green. That's the color of the KOOL, Newport, or Salem cigarette pack. Get it? Green is cool. Red is hot.

Menthol, a component of peppermint oil, is a colorless topical pain reliever like Novocain that the dentist uses to numb a tooth.

The idea of adding menthol to reduce smoking's harshness on the throat came to Lloyd "Spud" Hughes in the 1920s, after he'd stored his cigarettes in an old tin of menthol crystals that his mother insisted that he inhale for his asthma.

He patented the process in 1924, and three years later the Axton-Fisher To-

bacco Company acquired the patent and began manufacturing "Spud Menthol Cooled Cigarettes."

Today, as the Biden administration targets mentholated cigarettes, it behooves us to review the history of the tobacco industry's marketing campaigns that target Black Americans.

I first presented such an illustrated overview of the impact of smoking on minority populations on March 31, 1987, at a meeting of the Surgeon General's Interagency Council on Smoking and Health. A month later, I presented it at the First International Conference on Realities of Cancer in Minority

Communities, held at MD Anderson Cancer Center.

That presentation, now included in an online exhibition I curated in 2018, "Of Mice and Menthol: The Targeting of African Americans by the Tobacco Industry," can be viewed on the website of the University of Alabama [Center for the Study of Tobacco and Society](#).

Lighting up with Willie the Penguin

Brown & Williamson's KOOL cigarettes became the best-selling mentholated brand beginning in the 1930s. Fifty years

before Joe Camel was born, KOOLs were promoted by a cartoon mascot, Willie the Penguin, who appeared in comic books, baseball scorecards, and the Sunday funnies.

In 1956, R. J. Reynolds launched its menthol brand, Salem, and in 1957 Lorillard introduced Newport. Philip Morris produced its first menthol brand, Alpine, in 1959. Through corporate mergers, Newport, Salem, and Kool are all now marketed by Reynolds-American, the U.S. subsidiary of British American Tobacco.

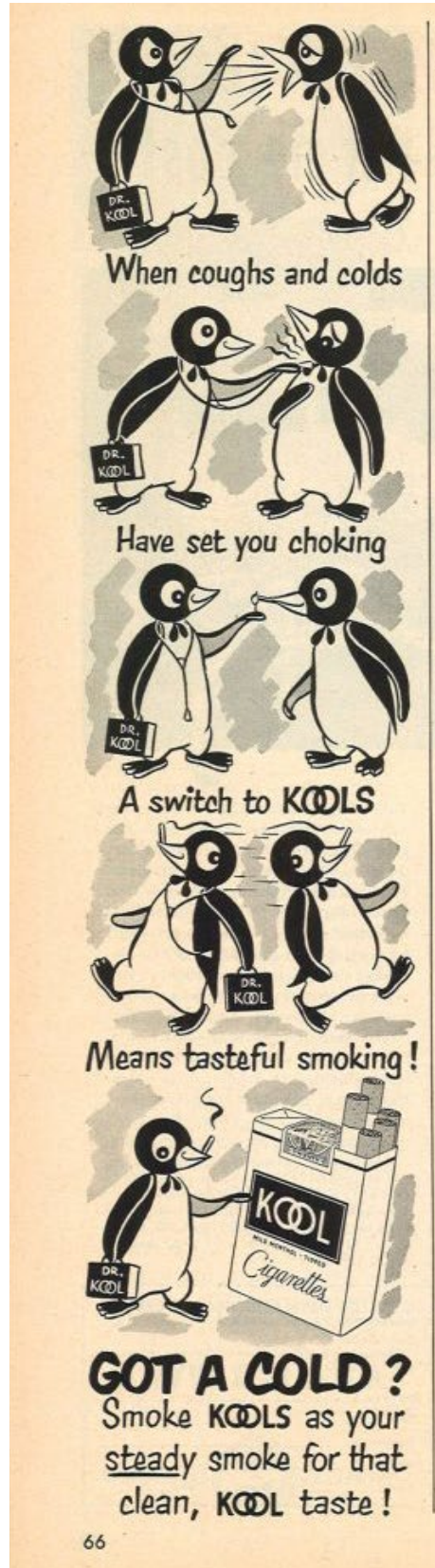
The rise of the civil rights movement led the tobacco industry to advertise heavily in the Black press, and menthol brands were the ones most advertised. Partly as a result, since the 1960s Newport has been the leading cigarette brand among African Americans.

One of the effects of the removal of cigarette commercials from television in 1971 was an increase in cigarette advertisements in minority-owned newspapers and magazines.

Few magazines have been aimed exclusively at an African American readership, but the two with the largest circulations, reaching a third of the adult Black population, were the monthly *Ebony*, founded in 1945, and the weekly *Jet*, founded in 1951, both published by Johnson Publishing Company in Chicago until the company was sold in 2016. (Both publications are now online only.)

Up to a third of the ads in many issues of *Ebony* and *Jet* were for cigarettes. By my count, neither magazine ever published an article focusing on the impact of cigarette smoking in the African American community.

A similar situation existed in the approximately 100 African American-oriented newspapers in the United States and Caribbean region. This advertising not only recruited new users, but also in-



1952 Kool ad published in *Time*.

Image courtesy of The University of Alabama Center for the Study of Tobacco and Society

creased the complacency of those who did not smoke by normalizing smoking.

The result was that in the latter half of the 20th century, a substantial portion of the African American press never published news articles or editorial comment antithetical to tobacco use and promotion.

To the contrary, an advertisement in *Ebony* in June 1992 for Nabisco Foods Group, a subsidiary of RJ Reynolds, saluted the magazine's publisher and seven other African American entrepreneurs as "role models to our nation's youth and as inspiration to all of us."

A "liberation cigarette"?

Beginning in the 1940s, cigarette manufacturers appealed to African Americans through endorsements by athletes, including former world heavyweight boxing champion Joe Louis and baseball players Jackie Robinson, Elston Howard, and Hank Aaron.

When cigarette ads were banned from TV, beginning in 1971, to circumvent the intent of the ban, the tobacco companies increased their ad spending on billboards in sports arenas and stadiums that were visible at key camera angles.

In the 1980s, packaging for cigarette brands most favored by African Americans became the focus of several advertising campaigns. Examples included striking graphics on packs of R. J. Reynolds' Salem ("The Box") and the company's short-lived, controversially named Uptown brand.

Deloyd Parker, executive director of SHAPE (Self-Help for African People through Education) Community Center in Houston suggests that the redesign of the Salem brand to include the colors of the flag of African unity—red, black, and green—was a cynical attempt by

N.Y. YANKEE STAR ELSTON HOWARD
Smokes **KOOL!**

I Like that Clean Taste and Smooth Feeling in my Throat

Elston Howard

ONLY KOOL BRINGS YOU REAL MENTHOL MAGIC!

You feel a new coolness deep in your throat!

You'll agree with Yankee star Elton Howard. When you come up to the Mental Stage of KOOL, you have a new choice, feel a wonderful smoothness deep down in your throat! So naturally, only KOOL, the regular filter cigarette, is the menthol cigarette.

Now you can Menthol Magic, Taste Elton Howard's Choice. Come to the way up to the Mental Stage of KOOL.

20 FILTER CIGARETTES MENTHOL 100'S

ALSO AVAILABLE WITHOUT FILTER

©1961 BROWN & WILIAMSON TOBACCO CORP. THE MARK OF QUALITY IN TOBACCO PRODUCTS

BOLD COLD

Newport

A whole new bag of menthol smoking

filter kings & 100's

20 FILTER CIGARETTES MENTHOL 100'S

More
at the Ebony Fashion Fair...

©1961 BROWN & WILIAMSON TOBACCO CORP.

Taste extra coolness as you smoke

Isn't it time you made Kool your steady brand? Come up to Kool Filter Kings. Taste the most refreshing coolness you can get in any cigarette.

©1966 BROWN & WILIAMSON TOBACCO CORPORATION THE MARK OF QUALITY IN TOBACCO PRODUCTS

VIRGINIA SLIMS
You've come a long way, baby.

MENTHOL

Slimmer than the fat menthol cigarettes men smoke. And rightly so.

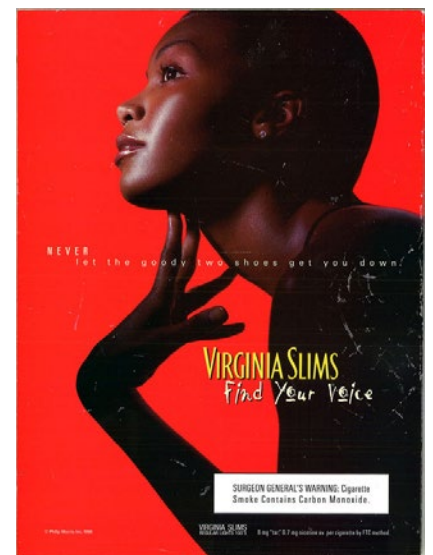
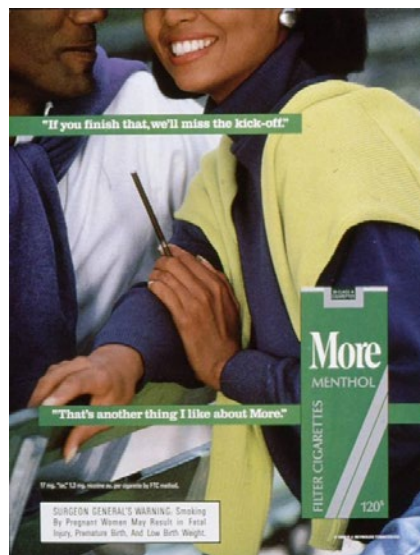
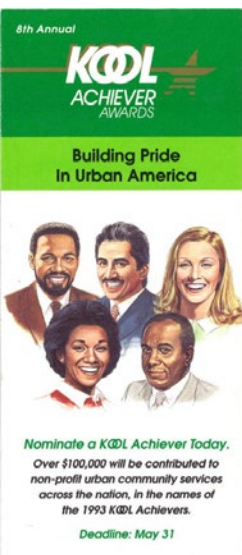
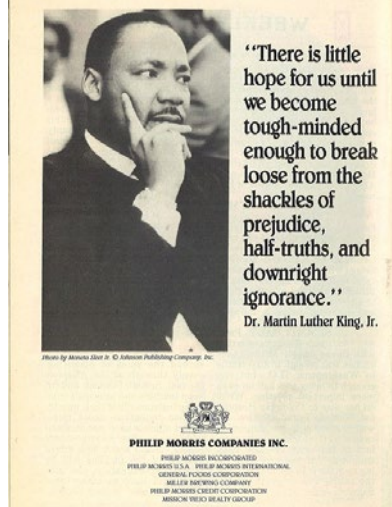
Menthol: 14 mg "tar," 0.9 mg nicotine—Lights Menthol: 8 mg "tar," 0.6 mg nicotine av. per cigarette, FTC Report Feb.'85.

SURGEON GENERAL'S WARNING: Smoking By Pregnant Women May Result in Fetal Injury, Premature Birth, And Low Birth Weight.

© Philip Morris Inc. 1988

Fashions: Paul Louis Ormer

Ads for menthol cigarettes from 1960 to 2000. All images courtesy of The University of Alabama Center for the Study of Tobacco and Society



R. J. Reynolds to create a “liberation cigarette.”

In the early 1990s, as rap music's popularity among African-American adolescents grew, R.J. Reynolds created a glistening metallic-foil outer wrapping for Salem, which the company called “The Wrap.”

Salem video vans roamed minority neighborhoods, showing rap videos and giving out free cigarettes. Brown & Williamson's “Kool Mixx” hip hop campaigns saturated the Black media in the early-2000s. Newport's “Alive with Pleasure” advertising slogan in advertisements featuring vibrant 20-somethings remained essentially unchanged throughout the 1990s and 2000s.

But magazine and newspaper ads, billboards, and cigarette pack designs for menthol cigarettes were not the only means of targeting African Americans by the tobacco industry.

Cultural events such as the *Ebony* Fashion Fair, an annual national tour hosted by Black sororities in dozens of cities, was sponsored by R.J. Reynolds' More cigarettes throughout the 1980s.

Brown & Williamson's KOOL Achiever Awards gave cash grants to Black community leaders throughout the nation. Philip Morris, which targets menthol versions of Benson & Hedges, Virginia Slims, and Marlboro to Black smokers, was a prominent sponsor of meetings of Black newspaper publishers and Black journalists, as well as of the National Association for the Advancement of Colored People (NAACP), the Urban League, and the United Negro College Fund.

Cigarette makers attempted to appeal to minority community markets by co-opting their art, music, and dance. From the 1960s to the 2000s, the musical genres of jazz, rock and roll, funk, disco, rhythm and blues, and hip-hop

became inextricably linked to smoking through tobacco-sponsored concerts.

Although cigarette smoking was found to be the major preventable cause of lung cancer, emphysema, and heart disease by the 1950s, a significant decline in smoking among minority groups did not occur in the 20th century. The fact that cigarette smoking became less fashionable among upper-income and middle-income groups lulled the public into believing that the United States was well on its way to ending the enormous toll taken by smoking.



From the 1960s to the 2000s, the musical genres of jazz, rock and roll, funk, disco, rhythm and blues, and hip-hop became inextricably linked to smoking through tobacco-sponsored concerts.



By 1985, the Task Force on Black and Minority Health of the U.S. Department of Health and Human Services reported that there were 58,000 excess deaths annually among African Americans, compared with the death rate for the white population.

Principal among the rising causes of death were cardiovascular disease and lung cancer—two major consequences of cigarette smoking, which is the only

risk factor that is both entirely avoidable and actively promoted.

Despite smoking's devastating health and economic toll, few state or county health departments had programs or personnel dedicated to countering the tobacco pandemic.

The first conference on smoking by the National Association of State and Territorial Health Officers did not occur until 1990, the first year that every state health department could say that it employed at least one individual assigned to reduce smoking.

The game-changing publication of the 1986 Surgeon General's report on involuntary or passive smoking gave credibility to the efforts of grassroots activist organizations such as ASH (Action on Smoking and Health), GASP (Group Against Smoking Pollution), ANR (Americans for Nonsmokers' Rights), airline flight attendants, and others to step up their lobbying for clean indoor air laws, which they had begun to do in the 1970s.

The tobacco industry didn't sit in silence.

In the mid-1980s, Philip Morris ran advertisements in New York City's leading Black newspaper, *The Amsterdam News*, warning that Mayor Ed Koch's proposed restrictions on smoking in the workplace would promote “a perfect backdrop for employers who wish to discriminate against minority employees,” presumably because, compared to whites, a higher proportion of African Americans smoked.

The extensive public relations campaign by the cigarette companies may explain the paucity of Black leaders who denounced the targeting of African Americans by the tobacco industry. Grassroots African-American anti-smoking activism gradually emerged only in the late-1980s.

These pioneers in in-the-streets prevention include the Reverend Jesse W. Brown, Jr., Alberta Tinsley-Talabi, and Henry McNeill “Mandrake” Brown, Jr. are discussed in the [exhibition](#).

Targeting minority groups

For their part, Philip Morris executives would accuse critics of paternalism, suggesting that it was patronizing to think that African American consumers were incapable of making a free choice of whether or not to smoke.

In a CBS Nightly News story in 1985, Philip Morris CEO George Weissman was given an opportunity to defend his company's support of leading Black civic organizations, dance companies, and arts groups. Weissman said the company had a variety of other national and local sponsorships, including the Boy Scouts, the YMCA, museums, and hospitals.

In other words, “We advertise to everybody.”

Although the tobacco industry disproportionately targeted minority groups, there was also a decades-long indifference to reducing smoking in minority communities—and in some quarters, outright hostility by minority leaders to addressing the problem.

Here is the transcript of the [introduction](#) by the Rev. Benjamin Hooks, longtime leader of the NAACP, of the keynote speaker at the NAACP's annual [Spingarn Medal Dinner](#) in 1990:

I'm pleased to acknowledge tonight, that one of our greatest contributors across the years have been the Philip Morris Companies.

The Philip Morris Companies today sponsor this dinner. Philip Morris is a long-time friend of the NAACP, and a supporter of equal opportu-

nity. They did not just come to the table lately; we can remember when Philip Morris was a target of white supremacist boycotts because back in the 1950s, they insisted on having an integrated workforce and because of its support for Black organizations.

We remember when Philip Morris was a pioneer in hiring Blacks for non-traditional jobs in Industry. Today, we know that Philip Morris is a leader in corporate support for community organizations, minority businesses and affirmative action. Phillip Morris has been regularly cited by *Black Enterprise* magazine as one of the country's best places for Black people to work. Philip Morris is a major supporter of Black colleges. It's a company that cares, and I want to tell you something: We're happy that they're sponsoring this dinner tonight. This means that we can use the money to increase and enhance our programs.

It's appropriate also because the Spingarn Medal honors achievers who are models for our youth, and Philip Morris is a high-achieving company that is a model for corporate social responsibility.

I want to say two things that are not on this script. But some reporter asked me, were Black leaders afraid to speak out because tobacco and alcohol companies give us some money? And without any disrespect to anybody here, I said, “Why don't you go and ask the publisher of *The New York Times*? Why don't you ask the publisher of *TIME Magazine*, *Newsweek*, *BusinessWeek*? Why is it that when Black folk get a dime, somebody thinks we're selling out and white folk get a million dollars, and nobody ever asked them are they selling out?” That's a damned racist question and I want

you to know, members of the press, that I consider it so.

I'm not for sale to anybody. Jesse Jackson's not for sale. John Jacob, Andrew Young, all the rest of the black leaders, Coretta Scott King, we're not for sale. But if the tobacco companies want to give us some money to help us move Black people forward, in the name of God give it. We're going to pray over it, and accept it, and receive it, and use it to build a stronger, stronger America. I want that clearly understood, and anybody that asks that question, you tell them they're racist.

I'm standing here tonight, holding a check for \$100,000 from the Philip Morris Companies to help us put on this affair. I'm well glad and elephant proud to have it, and I'm not apologizing to anybody from the top side of Heaven to the bottom side of hell. If you don't want to get drunk, don't drink. If you don't want to smoke, don't smoke. But we're going to use that money to help build something to make this nation go forward.

May I present to you our friend, our brother, our comrade in arms, the honorable George Knox, vice president of public affairs for Philip Morris. Give him a great big hand. Give him a great big hand! Give him a great big hand!

Cringe-inducing as these remarks are, Hooks' questioning the criticism of Black organizations and publications for accepting tobacco money is fair and compelling: “Why is it that when Black folk get a dime, somebody thinks we're selling out, and white folk get a million dollars, and nobody ever asked them are they selling out?”

Hooks was spot-on: the tobacco industry's targeting of Black smokers is but

one unseemly aspect of a serious societal problem.

Biden's proposal in perspective

Since 2000, much of the literature cataloging the advertising and promotion of tobacco products to minority groups has been a rehashing of the same hand-wringing essays. Most articles decry a litany of injustices wrought on these groups by the tobacco industry. The prevailing tone of the authors is one of moral outrage.

Proposed solutions have been few and far between, owing in part to the reluctance on the part of minority opinion leaders to criticize one another and risk creating the appearance of a divided community.

The problem is especially worrisome at the governmental level, where grants are awarded to earnest but inexperienced individuals for ambitious-sounding pilot projects on smoking cessation or prevention, with little likelihood that they can or will be replicated.

Research on the study of tobacco promotion to minority groups is mired in a descriptive phase, which invariably includes counting the number of cigarette signs on convenience store storefronts in minority neighborhoods (as opposed to challenging the existence of racial segregation and inappropriate zoning laws) and reciting the litany of tobacco industry gifts to legislators.

The Family Smoking Prevention and Tobacco Control Act, signed into law by President Barack Obama in 2009, gave FDA the putative authority to regulate the content, marketing and sale of tobacco products.

The problem was that Congress essentially grandfathered in cigarettes. Unlike medications that can be pulled from the market by the FDA for causing severe side effects, cigarettes can't be banned by the the agency. However, Congress did create a 12-member Tobacco Products Scientific Advisory Committee (TPSAC) to advise the FDA, and directed the TPSAC to address the issue of mentholated tobacco products as its first order of business.

In 2011, the TPSAC concluded that the removal of menthol cigarettes from the market would benefit public health, but it did not recommend that the FDA take specific action to restrict or ban menthol. Meanwhile, the tobacco industry claimed, with some justification, that menthol cigarettes were no riskier than regular cigarettes and should not be regulated differently.

Until last week's announcement of its intention to ban menthol, then, the FDA has continued to permit tobacco companies to add menthol to cigarettes.

In the face of this foot-dragging, in 2018, San Francisco became the first U.S. city to ban the sale of flavored tobacco products, including menthol cigarettes, after voters approved a proposition.

Although increased calls for federal, state, and local legislation—on taxes, warning labels, teenage access to tobacco, and advertising restrictions—have stimulated greater public dialogue, these are less effective steps toward reducing demand for tobacco products than are major paid campaigns in the mass media to undermine the tobacco industry and its brand name products.

But tackling the smoking pandemic must also take into account the dynamism of the tobacco industry and its allies, who continue to create ways to

insinuate tobacco products and electronic cigarettes into the social fabric of African American communities.

However belated, the Biden administration's proposed ban on menthol is a no-lose first step for reducing smoking among African Americans.

An even bolder move would be to ban cigarette filters, which are on 99% of commercially sold cigarettes. Introduced by the tobacco industry in the 1950s, following the early studies showing cigarette smoking caused lung cancer, the filters do not confer any level of harm reduction.

The industry has been careful not to claim that they do, but the inference from cigarette ads is that the filters block out all the bad stuff and make smoking, in a word, safer. Thus the major breakthrough by the tobacco industry was to create a gimmick that removed smokers' fears about lung cancer, even while it knew the same dangers were still there.

Nearly 60 years after cigarette smoking was identified by the Surgeon General as the nation's leading preventable cause of death and disease, far more funding still goes to repetitive or redundant research than on action against smoking, such as paid counter-advertising in the mass media.

Although progress has been made in reducing cigarette smoking among African Americans and in restricting cigarette advertising, the problem remains significant, requiring greater commitment—and action—on the part of health professionals, government agencies, academia, and the business community alike to end the smoking pandemic.

CTCA leaves Tulsa and Philadelphia; Tulsa move comes amid Blue Cross cost-cutting moves

By Paul Goldberg

In recent weeks, the privately held Cancer Treatment Centers of America has sold the assets of its Philadelphia hospital and closed its hospital in Tulsa.

In Tulsa, CTCA was caught in a larger battle between Blue Cross and Blue Shield of Oklahoma and the state's healthcare providers, including [OU Physicians](#) and [St. Francis Health System](#), both of which are being phased out of the network.

Oklahoma University Stephenson Cancer Center is the only NCI Cancer Center in the state (*The Cancer Letter*, [May 4, 2018](#)).

In the highly competitive Philadelphia market, the CTCA hospital is being sold to Temple University Hospital, which owns Fox Chase Cancer Center (*The Cancer Letter*, [March 5, 2021](#)). Temple officials said to *The Cancer Letter* that they plan to rehire a large number of CTCA's 375 employees in Philadelphia.

"The decisions in Philadelphia and Tulsa were based on market factors that, while highlighted during COVID-19, certainly existed before the pandemic," a CTCA spokesperson said to *The Cancer Letter*. "Our key focus areas moving forward will be on in-home oncology care options, telehealth, precision medicine, clinical research, and expanding our partnerships and affiliations with other health systems to improve oncology outcomes in additional communities."

CTCA's three remaining markets—Chicago, Atlanta and Phoenix—include three hospitals and five outpatient centers.

"The transitions in Philadelphia and Tulsa were based on very specific market conditions that do not exist in Atlanta,

Chicago and Phoenix. These markets do support patient choice and investment in the future of cancer care," the spokesperson said.

"CTCA will continue investing in key markets that will build on more than 30 years of patient-centered, high-quality care."

Philadelphia is a tough market, where CTCA had to compete with three NCI-designated institutions—two of them Comprehensive Cancer Centers—located in the city limits as well as multiple high-quality health systems in the region.

"This past year has highlighted this community's unique needs for optimal patient access locally, as well as expanded

access to services beyond cancer care,” the spokesperson said. “Temple Health is well-positioned to integrate these facilities into a broader continuum of care, while expanding access to their services for the local community. Our top priority will be to ensure the seamless transition of patient care either to another CTCA facility or to a provider of their choice as well as work with Temple Health on employee transitions.”

Temple and CTCA describe their deal as an asset purchase agreement covering the buildings, equipment and supplies of the campus located at 1331 E. Wyoming, Ave., in the Juniata Park section of Philadelphia. The deal is subject to approval by the Pennsylvania Department of Health.

The purchasing price was not disclosed.

Clouds over Oklahoma

In Tulsa, the company said its departure is prompted by restrictive coverage policies.

Though CTCA didn't name a specific insurer, other healthcare institutions in the state have been locked in conflict with Blue Cross Blue Shield of Oklahoma.

“Despite working tirelessly to overcome significant market conditions that inexplicably restrict patient care options, and exhausting all options, unfortunately, we realized the Oklahoma market was not going to expand options for patients to treat at CTCA Tulsa, which led to this very difficult decision,” a CTCA spokesperson said to *The Cancer Letter*.

To young patients with cancer, the insurer is a threat as ominous as the disease, the OU Health Stephenson Cancer Center declares on its website. “They're

fighting cancer, but now Blue Cross Blue Shield is their biggest threat,” the letter to Oklahomans reads.

“Blue Cross Blue Shield continues to undervalue our pediatric experts, and enough is enough.”

The letter continues:

Blue Cross Blue Shield's most recent offer to OU Health Physicians was actually lower than the rates in our current contract. They are using their dominance in the Oklahoma market to drive down reimbursement to all providers in Oklahoma. These unacceptable antics are being implemented at a time when their parent company is enjoying soaring profits and excessive executive bonuses.

- Bonuses paid to BCBS executives far exceed the supposedly “excessive” asks of OU Health Physicians.
- Oklahoma is nearly 50th in the nation for the number of physicians it has compared to the number needed to serve its people.
- It is getting more difficult to recruit and retain the type of healthcare talent Oklahomans need and deserve.
- Our ability to recruit and retain is directly tied to the reimbursements we receive from BCBS for our services.

We are asking Blue Cross Blue Shield to invest in Oklahoma healthcare—not executive bonuses and soaring profits.

Responding to questions from an Oklahoma news outlet recently, BCBSOK said OU Physicians group and CTCA pa-

tients aren't precluded from going to out-of-network healthcare providers if they are willing to pay higher out-of-pocket expenses:

As the state's oldest and largest customer-owned health insurer, Blue Cross and Blue Shield of Oklahoma (BCBSOK) provides access to quality health care for all members. The vast majority of BCBSOK members have coverage for out of network services and can choose to utilize them anywhere they want, including Cancer Treatment Centers of America (CTCA).

It is unfortunate that BCBSOK members receiving care at CTCA's Tulsa campus will be impacted by the closure. We will work with our members to transition care to other facilities so local treatment can continue. BCBSOK's network of in-state oncology providers is adequate and robust, enabling Oklahoma residents with Blue Cross Blue Shield coverage, to access high-quality cancer treatment and care.

We negotiated in good faith with OU Physicians group in Oklahoma City to find a mutually beneficial agreement that was in the best interest of our members. We are disappointed that we were not able to reach an agreement with OU Physicians that would keep our members' premiums and out-of-pocket costs reasonable.

This is not the outcome we had hoped for, but our networks remain strong and our members will continue to have access to thousands of quality, in-network providers in the Oklahoma City metro and across the state.

Brendon Stiles, MD

Chief & Professor, Thoracic
Surgery & Surgical Oncology;
Associate Director, Surgical
Services, Montefiore-Einstein
NCI Cancer Center

Robert E. Michler, MD

Surgeon-in-Chief, Chairman
& Professor, Surgery and
Cardiothoracic & Vascular Surgery

World-renowned lung cancer specialist, Dr. Brendon Stiles, joins Montefiore-Einstein

"Every surgical lung therapy available anywhere in the world will now be offered by Dr. Stiles, elevating the treatment of lung cancer at Montefiore-Einstein to a historic level."

– Robert E. Michler, MD

montefiore.org/DrBrendonStiles

Schedule a consultation with Dr. Stiles
by calling 718-920-5732.



Montefiore



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Hinrichs spoke with
Paul Goldberg, editor and
publisher of The Cancer Letter.

A



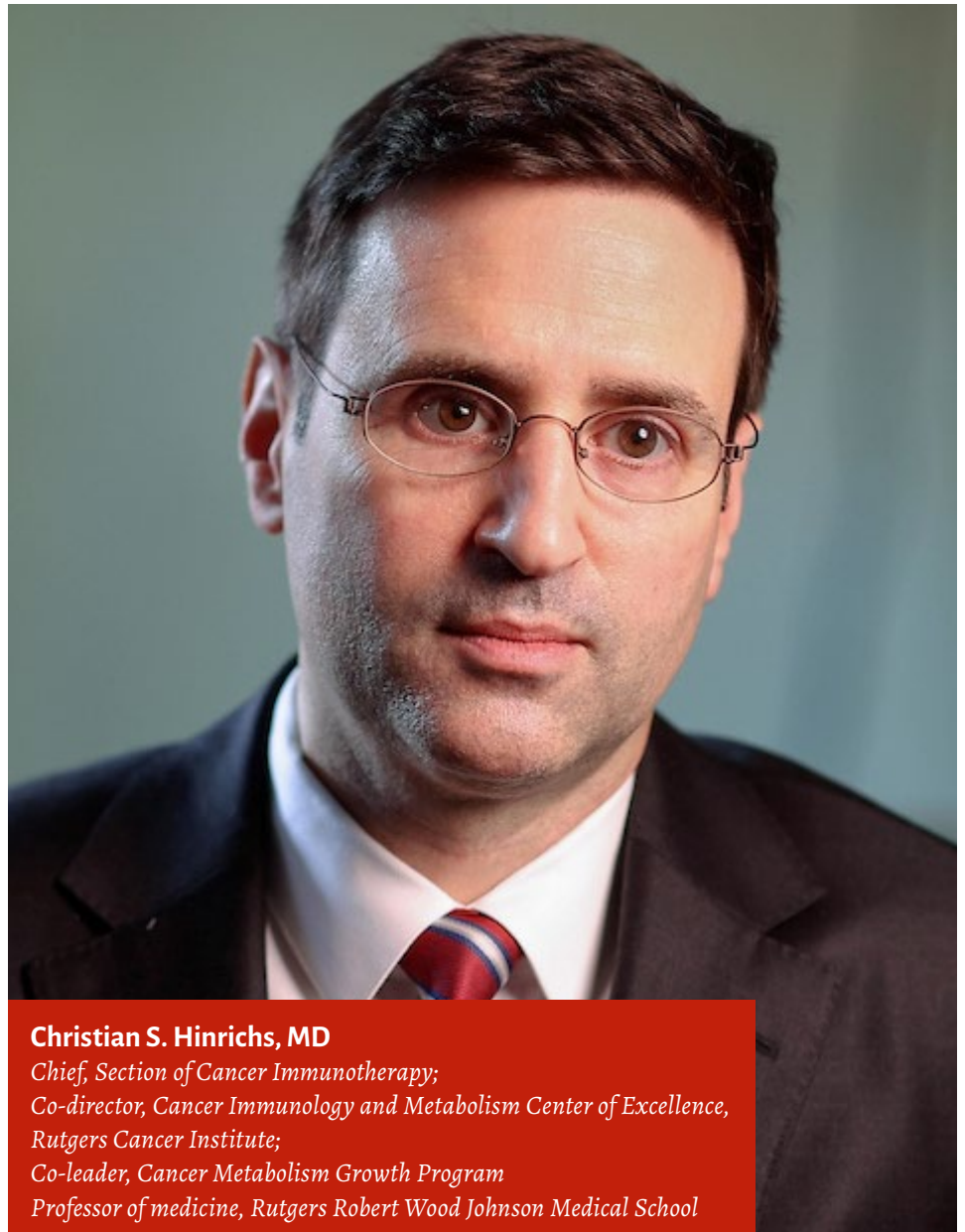
CONVERSATION WITH
THE CANCER LETTER

Hinrichs reflects on his move from NCI to Rutgers Cancer Immunology and Metabolism Center of Excellence

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We are focused on the discovery and development of new T cell therapies, particularly gene-engineering approaches that allow T cells to specifically and powerfully target tumors.

”



Christian S. Hinrichs, MD

*Chief, Section of Cancer Immunotherapy;
Co-director, Cancer Immunology and Metabolism Center of Excellence,
Rutgers Cancer Institute;
Co-leader, Cancer Metabolism Growth Program
Professor of medicine, Rutgers Robert Wood Johnson Medical School*

Christian Hinrichs recently moved to a new role, as chief of the Section of Cancer Immunotherapy and co-director of the Cancer Immunology and Metabolism Center of Excellence at Rutgers Cancer Institute of New Jersey.

He co-leads the center with Eileen White, deputy director and chief scientific officer at Rutgers Cancer Institute.

Hinrichs was recruited from NCI, where he most recently served as a tenured senior investigator in the Genitourinary Malignancies Branch. His research is focused on the development of cellular therapy for cancers that begin in epithelial cells. Hinrichs also develops treatments for HPV-associated cancers.

Hinrichs spoke with Paul Goldberg, editor and publisher of *The Cancer Letter*.

Paul Goldberg: Can you tell me how your immuno-oncology program at Rutgers is different from others?

Christian Hinrichs: I think this program will be different from most other programs in a number of important ways. It will be particularly strong in bench-to-bedside research. The power of well-designed, iterative clinical trials cannot be overstated to get at the truth of a hypothesis in human disease. We are putting into place key expertise and facilities for first in human clinical trials in immunotherapy and cell therapy.

The program also is developing in a highly collaborative research environment where investigators interact freely, and in a right-sized institution with a strong culture of teamwork and collaboration.

The institution is also the right size in the sense of serving a large and diverse patient population in New Jersey, which is so important for cancer research. I'm already working with some really bril-

liant researchers and physician-scientists here, like [Eileen White](#) and [Shridar Ganesan](#), [Howard Hochster](#), and [Andy Evens](#), and many others.

PG: But you're also combining immunology with metabolism, which I guess is something that few institutions do. Does anybody else?

CH: The program is distinguished by a concerted connection and collaboration across immunology and metabolism. This is a particular strength that has evolved from the work of Eileen White. She has built up a very strong metabolism program. Her longtime work in this area with Joshua Rabinowitz at Princeton University, our NCI research consortium partner, is now providing an opportunity for additional collaboration.

Recently, the Ludwig Institute for Cancer Research created a Princeton Branch, which is being led by Josh – Eileen is the associate director of the new Branch. The work of the Ludwig Princeton Branch, coupled with the work of our Cancer Immunology and Metabolism Center of Excellence at Rutgers will provide additional collaborative opportunities to translate metabolism related research into human trials through RWJ Barnabas Health and elsewhere.

PG: Can we go through the basic science of the rationale of combining immunotherapy with metabolism? Is there a way of kind of walking me through it, maybe on the sixth-grade level?

CH: At a fundamental level, you can look at it from the perspective of the T cells and from the perspective of the tumor. There is substantial and growing evidence that the way T cells make and utilize energy can determine

their therapeutic potential in cancer immunotherapy.

Understanding and controlling these processes might increase T cell effectiveness in cancer treatment. There is also growing evidence around the importance of tumor metabolism in tumor growth and in tumor susceptibility and resistance the immune system.

PG: Can we talk about your work in cell therapy? Where does the science take you in the clinic, and what's your vision for translating the science into interventions?

CH: Cell therapy is a particularly potent way to target cancers. We are focused on the discovery and development of new T cell therapies, particularly gene-engineering approaches that allow T cells to specifically and powerfully target tumors. We have recent discoveries from the laboratory that are showing promise in the clinic, such as tumor-infiltrating T cell therapy and engineered E7 TCR-T cell therapy for human papillomavirus-associated cancers.

And we have other even newer discoveries that we will be translating into clinical trials soon, such as the KK-LC-1 TCR for certain gastric, lung, breast, and cervical cancers. In the meanwhile, we are also working through a number of strategies to discover new TCRs to target additional types of cancer and new technologies to increase the potency of the therapeutic T cell platform.

PG: Can we talk about the NCI intramural program? It's always been regarded as a sheltering place where ideas can grow.

CH: The intramural program was a great place for my research program as it was initiated, and it's been a great place for

the research that I've done to date. The extramural program, of course, is a different world, but it brings in a lot of important components that can accelerate the research. And this includes new collaborations.

It also includes joining the Center of Excellence with Eileen White and working with my colleagues here at Rutgers Cancer Institute, and the important crossover research that we're doing now with metabolism. And importantly, it includes, the patients of New Jersey that are treated at this NCI-designated Comprehensive Cancer Center in collaboration with the oncology service line at 11 hospitals across the RWJBarnabas Health system.

So, the NCI intramural program was indeed a great place to get started. I think the transition to the extramural program at Rutgers Cancer Institute and within the Center of Excellence affords a great opportunity to accelerate growth of my research.

PG: Well, you've got an enormous health system at Rutgers. That must be very helpful.

CH: It's great to be grounded and connected with the patients. And it's also great from a clinical research standpoint.

PG: How many patients do you need for your trials?

CH: Most of the early development can be done in relatively small phase I trials. The last two phase I trials I conducted had only 12 patients. Careful trial design and deep translational research can really help us learn a lot from each patient. And decisive advances have come from each trial. We do need to screen a larger number of patients for trial eligibility though because the treatments are so targeted.

PG: What was it like to start a new program at the time of COVID? Are you able to get to the lab?

CH: Rutgers has taken a thoughtful, pragmatic approach. They have all of the precautions to work safely. And the laboratories and the clinical research have stayed remarkably productive.

PG: I've been asking this question a lot last year. How far are we from the point where immunology and infectious disease, and oncology are kind of starting to converge into a single area. Is that still a generation away or is that happening? Is that even real?

CH: I think it's very much happening. It's an interesting question for you to ask me, because much of my research is the study of targeting viral antigens for the treatment of cancer. Steven Libutti, our cancer center director, recently made the point that the vaccine platforms that we're using now for COVID have been largely developed in the tumor immunology cancer setting. My work includes some research that might be applied to either cancer or infection.

PG: Are you getting close now to where you might be able to develop a drug for one thing and use it for across indications, in virology, immunology and oncology?

CH: Certainly, in virally-induced cancers the connection there is clear, and the treatments that target viruses in one setting may well be applicable to the other setting. There is potential for crossover. It's happening now.

“

Careful trial design and deep translational research can really help us learn a lot from each patient. And decisive advances have come from each trial.

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CANCER HISTORY PROJECT

A document in perspective: Otis Brawley on Frank J. Rauscher's 1975 Cancer Program update

By Otis Brawley and Paul Goldberg

“A document in perspective” is a new feature of the Cancer History Project.

The objective is to take a noteworthy document—be it prescient or naive—and illuminate it by placing it in proper historical and scientific context.

We begin with a 1975 report by then NCI Director Frank J. Rauscher, Jr. The report's title—Cancer Program is Well Underway—reflects the triumphalism of its time. The National Cancer Act was signed not quite four years earlier, and the most optimistic of its boosters had promised the cure by the U.S. Bicentennial a year hence.

The document is put in perspective by Otis W. Brawley, the Bloomberg Distinguished Professor of Oncology and Epidemiology, Johns Hopkins University and co-editor of the Cancer History Project.

“In this press report, issued four years after the signing of the National Cancer Act, Dr. Frank Rauscher, then director of the National Cancer Program and the National Cancer Institute discusses progress in implementation of the National Cancer Act,” Brawley writes.



“This type of report was common in trying to maintain momentum and public support for the National Cancer Program. Dr. Rauscher emphasizes that the goal of the National Cancer Act was “development and application of the means to reduce cancer incidence, morbidity, and mortality among the population of the United States.”

As editors of the Cancer History Project, we invite our collaborators to suggest other documents—and use this format to put them in perspective.

CANCER PROGRAM IS WELL UNDERWAY

Frank J. Rauscher, Jr., Ph.D.

*Director, National Cancer Program
National Cancer Institute*

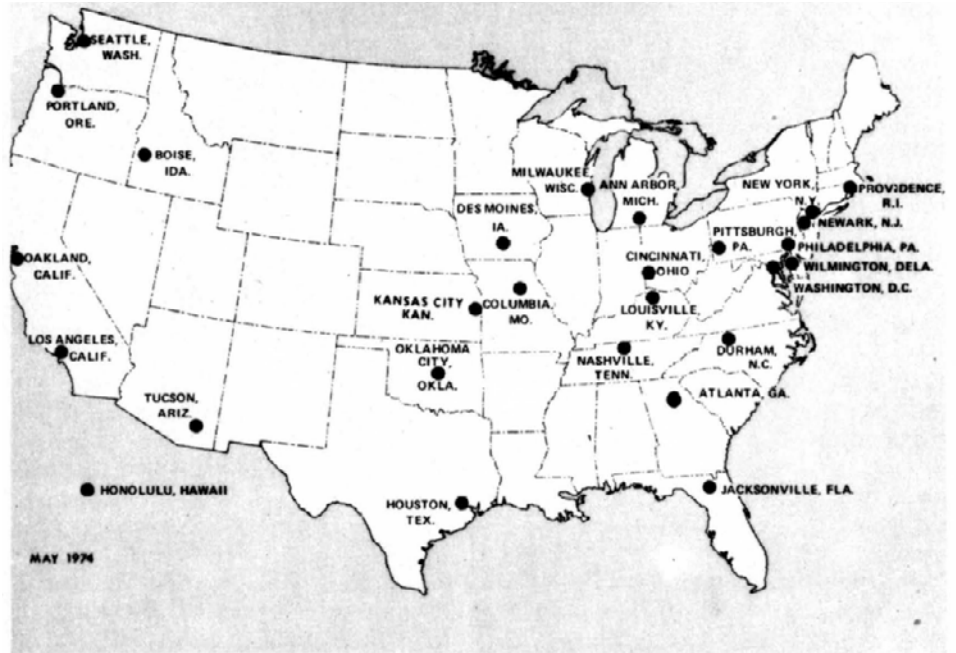
January 15, 1975

U.S. Medicine
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UCATION, AND WELFARE
National Institutes of Health

Under the National Cancer Act Amendments of 1974, the National Cancer Program (NCP) is now well into its second three-year authorization.

The NCP has moved forward under its various mandates in the past year in activities aimed at forging a national focus for the ultimate conquest of cancer. The activities have been designed to work toward that goal by initiating immediately development and application of the means to reduce cancer incidence, morbidity, and mortality among the population of the United States.

Progress has been made, first, in the research mandate, which provides



Breast cancer detection demonstration projects

for scientific efforts ranging from basic research on cancer biology to applied research on all aspects of the management of cancer.

Second, progress has been made in the cancer control, or demonstration and communication, mandate, which provides for bridging the gap between knowledge produced through research and its general application in people.

Third, progress has been made in coordination of NCP activities. Advances were made in establishing and expanding the interrelationships between the programs of the National Cancer Institute and other relevant federal and non-federal programs required for the most expeditious use of the national resources for cancer.

Such interrelationships are fostered through a variety of programs, such as cancer centers, organ-site task

forces, cancer control program, international activities, and the extramural program, which supports grants, contracts, and interagency agreement.

Progress against breast cancer

Among the highlights of progress reported during the year, the advances against breast cancer are especially worthy of note.

In American women, the breast is the leading site of cancer incidence (90,000 last year) and deaths (33,000), and its mortality rate has not been significantly reduced in the past 35 years, despite all efforts. The first results from an intensive program mounted by NCI's breast cancer task force to improve the diagnosis and treatment of this dreaded disease were reported

in September at a symposium for practicing physicians.

One of the reports was on results from a nationwide breast cancer screening demonstration program sponsored jointly by the American Cancer Society and NCI.

It indicated an increase in the percentage of women who did not have cancer in the regional lymph nodes at the time their breast cancer was diagnosed.

About 75 percent of approximately 300 symptom-free women whose breast cancer was detected by the screening program had cancer-free nodes, as compared with the usual figure in the United States of 45 per cent. Patients whose nodes are free of cancer at the time of diagnosis have a 5-year survival rate of about 75 per cent and a 10-year survival rate of about 65 per cent. But women with positive nodes have a 5-year survival rate of about 50 per cent and only about 25 per cent live 10 years.

The NCI-ACS program involves some two dozen breast cancer screening projects, which will screen annually up to 270,000 women 35 years of age and older with a physical examination, X-rays (film mammography or xeroradiography), and thermography.

An NCI-supported study has shown that early detection does decrease breast cancer death rates. A group of 31,000 women screened for breast cancer by a combination of physical examination and x-ray mammography had a one-third reduction in breast cancer deaths over a 5-year follow up period. One-third (44 out of 132) of the breast cancers detected in the study were found by

mammography before the tumors were large enough to be detected physically. Forty-three of these 44 women survived their disease during the 5-year period, indicating that early detection led to increased effectiveness of treatment.

Another report to the symposium was on a large clinical study conducted by the national surgical adjuvant breast project to determine the optimal treatment for primary breast cancer. The study involves 34 institutions and some 1,700 patients.

Results after two years show that, in women with clinically negative nodes treatment with total mastectomy (removal of the breast only), total mastectomy with radiotherapy of the chest, or radical mastectomy yielded essentially equal recurrence rates.

In women whose disease involved the breast and axillary nodes, radical mastectomy or total mastectomy combined with postoperative radiotherapy also yielded essentially equal recurrence rates. The recurrence rate for the latter group was 35 per cent, about twice that for the group without apparent spread of cancer outside the breast.

A new, larger study is being organized to extend the observations, and possibly to include a determination of the effectiveness of "lumpectomy," surgical removal of the tumor but not the entire breast.

A second treatment study, aimed at metastatic disease, is investigating the use of postoperative systemic chemotherapy in women who were found at surgery to have positive axillary nodes. The study encompasses 37 hospitals and about 250 patients.



Brawley: Dr. Rauscher declares that there has been progress in the research mandate, as well as in cancer control, and in coordination of activities in the National Cancer Program. Specifically, he lauds progress in breast cancer.

This was just after the wife of the president, Betty Ford, and the wife of the vice president, Margaretta (Happy) Rockefeller had both been diagnosed and treated for breast cancer. It was also just several years after the first prospective randomized study to suggest the x-ray of the breast or mammography reduced risk of death.

The reader will note that orthodox epidemiology had not yet arrived at NCI. There are several times when surrogates for reducing the number of deaths are espoused. The report talks a great deal about finding tumors early or increasing the number or proportion surviving five years.

There would be a series of arguments in *The New England Journal of Medicine* in the mid-1980s as to what is evidence of progress. It's an argument that continues to this day as survival statistics are frequently misused to claim progress.

The data after two years indicated that the rate of cancer recurrence was significantly reduced for women receiving L-phenyl-alanine mustard (LPAM), an oral anti-cancer drug.

The results were particularly striking in premenopausal women: 1 out of 30 patients receiving L-PAM had recurrence, as compared with 11 out of 37 receiving a placebo. For postmenopausal women, the recurrence rates were also reduced in the L-PAM-treated group, but not as markedly.

The L-PAM treatment produces minimal side effects and can be widely used. Further studies of drugs, in combination with L-PAM, in other combinations, and including the addition of immunostimulants, such as the attenuated tubercle bacillus, BCG, and another bacterial agent, *C. Parvum*, are planned.

The meeting also included a report on research to determine the role of hormone receptors (estrogen-binding proteins) in predicting response to hormone therapy.

The response of an individual patient to such therapy can be predicted on the basis of a laboratory determination of whether cancer cells removed at surgery carry a hormone receptor on their surfaces. About 50 per cent of biopsies of breast cancer contain the receptors. Those who will respond can receive hormone therapy, and non-responders can be given other therapies without delay.

Another report dealt with the research to improve the assessment of tumor burden by measurement of levels of biologic markers-substances found in the blood or urine correlating with the presence of tumor.

Ideally, levels of these substances will be high in the presence of tumor in the patient and should decrease as the tumor responds to therapy. Out of eight biologic markers stud-

ied, three (human chorionic gonadotrophin, HCG; carcinoembryonic antigen, CEA; and a transfer RNA nucleoside N²N²dimethyl-guanosine) were found to be present in abnormal amounts in breast cancer patients.

Using these markers, investigators found that 63 patients (97 per cent) in a group of 65 had abnormal levels of at least one of these markers. In a group of 15 post-operative patients with positive nodes, 10 (67 per cent) had elevated levels.

Altogether, the findings from the two-year report of the breast cancer task force suggest that less-than-radical surgery may be acceptable for treatment of primary breast cancer and that subclinical metastasis may be successfully treated with drugs.

If the results from numerous other studies of combination therapy are similarly encouraging, including the use of one or more of the drugs known to be effective against breast cancer, both the cure and survival rates should be improved substantially. (Alkylating agents such as cytoxan; antimetabolites, such as 5-fluorouracil and methotrexate; vinca alkaloids, such as vincristine; and antitumor antibiotics such as adriamycin. Combination; such as 5-FU, cytoxan, and prednisone; cytoxan, 5-FU, and methotrexate; and cytoxan, 5-FU, and adriamycin.) At the same time, the degree of disfigurement due to radical mastectomy should be reduced.

Brawley: The reader will note Dr. Rauscher lauds the use of a number of chemotherapies at the time. Among them L phenylalanine mustard or LPAM, CCNU and some that are still commonly used such as cyclophosphamide, methotrexate, leucovorin. There is mention

of some of the original modern day attempts at immunotherapy with BCG in breast cancer and melanoma.

This press release has some of the earliest discussion of measuring the estrogen receptor in breast cancer and the use of tumor markers to follow the course of disease and there was even speculation about tumor markers for screening.

Is also most interesting that he highlights the National Cancer Institute-American Cancer Society Breast Cancer Demonstration Project. This program, which began in 1972, would enroll more than 270,000 women ages 35 to 74 and provide them with physical examination and mammography or thermography of the breast.

It was lauded for showing a one third reduction in breast cancer deaths over a five-year period of time among women getting mammography and the fact that the procedure clearly resulted in earlier detection.

A little piece of history not in this press release. This would become an example of when science is implemented too fast.

The value of mammography had yet to be fully assessed and radiologists were not adequately trained to read mammography and pathologists were not adequately trained to read breast biopsies.

Two years later, a reference pathologist would review the 506 so-called minimal breast lesions found in this study and 66 of the 506 lesions were determined not to be invasive cancer nor ductal carcinoma in situ (Greenberg et al, 1976)(Culliton, 1976).

Almost all those 66 women had already received definitive therapy, which at the time was usually a Halsted radical mastectomy. An audit of the mammog-

raphy equipment used in the study also found that radiation dosing and quality of equipment was highly variable (Fischer et al, 1998) (Destouet et al, 2005).

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Combination therapy of cancer

Growing clinical evidence confirms the concept that combinations of therapeutic methods tailored to have a maximum impact on individual cancers produce significantly increased survival rates. Numerous clinical studies conducted and supported by NCI have shown the effectiveness of combination therapy against many types of cancer.

Among the recent progress reports are the following: In one type of lung cancer (oat cell), a response rate of more than 50 per cent and a significant prolongation of survival were achieved using a drug combination of cytoxan, methotrexate, and CCNU [1-(2-chloroethyl)-3-cyclohexyl-1-nitro-sourea].

In advanced non-Hodgkin's lymphomas, combination chemotherapy programs have produced complete responses in 45 per cent of 80 patients, with a median duration of about 4 years. Cytoxan, vincristine, and prednisone; nitrogen, mustard, vincristine, procarbazine, and prednisone; and cytoxan, vincristine, procarbazine, and prednisone.)

In advanced ovarian cancer, a four-drug combination of cytoxan, hexamethylmelamine, 5-fluorouracil, and methotrexate has produced an overall response rate of more than 70 per cent, as compared with 45 per cent for standard, single agent, PAM therapy. Treatment with a drug (BCNU) combined with radiotherapy following initial surgery has been shown effective against malignant gliomas of the brain. Median survival was 40 weeks as compared with 14 weeks in untreated patients.

Chemoimmunotherapy of malignant melanoma with a combination of a drug (dimethyl triazeno imidazole carboxamide, DTIC) and BCG produced a remission rate of 55 per cent in a group of patients with lymph node metastasis, as compared with a rate of 18 per cent for patients treated with chemotherapy alone. The duration of remissions and survival was significantly longer for patients treated with DTIC and BCG.

Similar results have been obtained with a multimodality approach to the treatment of childhood cancers.

In osteogenic sarcoma, surgery and infusion of large doses of methotrexate, followed by citrovorum factor to protect against the toxicity of the anticancer drug, have produced regressions of metastatic pulmonary lesions and increased survivals.

A report of followup of 4 to 12 months among 121 patients indicated that about 80 per cent had no evident disease; these results compare favorably with the usual 50-per cent survival at 6 months. Adriamycin is also being used in some studies.

The National Wilms' Tumor Study, another example of a cooperative, multidisciplinary approach, has shown the effectiveness of combinations of surgery, radiation therapy, and drugs, such as vincristine and actinomycin D. Overall 3-year survival rates of 60 per cent have been reported, and in certain early stages of the disease, survivals are approaching 100 per cent.

The message of the treatment research results is that there is a need for rethinking the approaches to the management of a broad spectrum of cancers. In the current thinking of research clinicians, planning for treatment must recognize that cancer usually is not a localized phenomenon, and that the use of drugs should be introduced earlier in the treatment schedule, before the cancer is far advanced.

The NCP has implemented its clinical program of treatment research to take advantage of combinations of methods in the primary treatment of local and regional disease, and disseminated disease.

In addition, research continues on the various treatment methods—surgery, radiotherapy, chemotherapy, and a possible new tool, immunotherapy; on drug development; and on studies in cellular control mechanisms that should lead to the design of increasingly effective antitumor agents.

Research progress in diagnosis and prevention

On the premise that early diagnosis is crucial to effective treatment, and that prevention is the best possible approach to the management of cancer, NCP activities in these areas have moved in a number of directions.

Among the advances, improved early detection has yielded encouraging results in lung cancer. In the early results of a large clinical trial of sputum cytology and chest x-ray to detect lung cancer before symptoms appear in heavy smokers, the cancers found were much smaller than in patients with symptoms.

In the burgeoning research area of immunodiagnosis, more than 25 potential immunodiagnostic tests for cancer were evaluated with the aid of a bank of stored serum specimens. In one evaluation, a test for a new purified fraction of carcinoembryonic antigen (CEA) was positive in about 50 per cent of patients with gastrointestinal cancer; there were very few false positives. This high level of discrimination is a major advance in improving the CEA test as an aid in the diagnosis of cancer.

In research on cancer cause and prevention, preliminary reports were issued from the Third National Cancer Survey, which collected demographic and medical information on all cancers newly diagnosed during the three year period 1969-71 in seven metropolitan areas and two entire states.

Among the important findings were indications of a significant increase in cancer among U.S. black men,

particularly cancer of the prostate and the esophagus, and a trend toward a more uniform incidence of cancer across the country.

It was also found that the most frequent site of cancer for both men and women is the large intestine, and that skin cancer occurs much more often than hitherto estimated.

Another new publication that is expected to provide a valuable tool for research leads to cancer risk by region is a compendium of cancer mortality data for each county in the country for the period, 1950-69.

An indication of a link between diet and cancer of the colon resulted from a study of Japanese migrants to Hawaii. The risk of developing colon cancer increased as this population of Hawaiian residents of Japanese descent adopted a western diet high in beef.

More and more evidence accrues to confirm the belief that environmental agents and social practices, rather than genetic factors, are largely responsible for variations in occurrence of cancer in different populations. In this context, the possibility of developing means for preventing cancer becomes an increasingly achievable goal.

Research in many scientific disciplines—immunology, cell biology, molecular biology, viral oncology, and chemical and other environmental carcinogenesis—is producing new information on the nature of the cancerous change from the normal state of an organism. Such new findings are incorporated into the research strategy aimed at ultimately developing the means to prevent cancer or diagnose it as early as possible in the course of the disease.

Brawley: Dr. Rauscher spends significant time discussing the Cancer Control Program. He heralds the publication of the third National Cancer Survey, which collected demographic and medical information in seven metropolitan areas from 1969 to 1971. This paper discussed variation in the occurrence of cancer and the likelihood that environmental agents play a substantial role rather than genetics.

Cancer control program

Progress has been made in disseminating information on cancer nationwide into general use primarily through the cancer control program. This program engages in field testing, demonstration, and development of model systems, rather than delivery of health care. It aims to systematically disseminate "practice-ready" research information on all aspects of cancer: prevention, detection and diagnosis, treatment, and rehabilitation and continuing care.

In its first full year of activity more than 100 contracts and grants were awarded across the country. Most states have cancer control projects within their borders and some have connections with cancer control activities in other States through network arrangements with nearby primary cancer control institutions. These projects are organized to assure active involvement of community hospitals, family physicians, state and local health departments, medical societies, lay and voluntary organizations, and other community resources.

In recognition of the fact that the best defense against death due to cancer is early diagnosis, the cancer control program placed a major em-

phasis on detection projects. These included the breast cancer screening projects already cited, projects established with 20 state health departments for uterine cervical cancer screening, and a few projects for lung cancer detection.

To assure optimal treatment for cancer patients throughout the country is another major objective of NCI's cancer effort. Effective cancer therapy requires an integrated approach involving the clinical oncologist, surgeon, radiotherapist, and pathologist.

This team should begin with diagnosis of the extent of the patient's disease in order to make decisions about combining surgery, irradiation, and anticancer drugs early in the treatment. The family physician should join this team to guide the course of diagnosis, treatment, and recovery.

Through a series of demonstration projects involving networks of cooperating community physicians and hospitals linked to major hospitals, the latest information on cancer treatment is disseminated.

The types of cancers currently being emphasized are breast cancer, head and neck cancer, acute leukemia of childhood, Hodgkin's disease, and non-Hodgkin's lymphomas. The primary hospital in the network may be an NCI-funded cancer center, or a centrally located hospital with a large cancer patient load. A wide range of consultation possibilities and care facilities will thus become available to the cancer patient.

As soon as possible in the cancer treatment process, attention should be given to rehabilitation of the pa-

tient. NCI is funding a wide range of projects demonstrating rehabilitation facilities, techniques, services, and training for professional and auxiliary health workers.

For example, a model patient rehabilitation service system is being developed to provide medical, psychological, and social support required to return the cancer patient to a normal and productive life.

Progress was also made in disseminating cancer knowledge through development of community outreach programs under the aegis of comprehensive cancer centers and clinical cooperative groups. Nine programs are being supported for development of methods to extend cancer control efforts to community hospitals, practicing physicians, and the general public.

Brawley: Dr. Rauscher discusses the beginning of what will become the Community Clinical Oncology Program as it tries to link cancer centers to doctors practicing medicine in the community.

This is a time when there are very few medical oncologists practicing in the community. Indeed, medical oncology programs would be building at this time and would ultimately start providing practitioners in the community in the 1980s.

NCI would eventually launch the community clinical oncology program or CCOP program which is now known as the National Community Oncology Research Program (NCORP).

The press release discusses programs and rehabilitation. This is an early effort at the promotion of cancer patient survivorship programs.

Cancer centers and cooperative groups

The NCI has also moved ahead under its mandate to establish comprehensive cancer centers. These will constitute a nationwide network of institutions whose purposes are to conduct a broad range of cancer research, projects and to develop and demonstrate the best methods of cancer prevention, diagnosis, treatment, and rehabilitation. The number of recognized cancer centers was increased by five during the year to a total of 17.

Fourteen are developing comprehensive cancer center programs: Fox Chase Cancer Center, affiliated with University of Pennsylvania, Philadelphia; the Sidney Farber Cancer Center, Boston; Colorado Regional Cancer Center, Denver; Duke University Medical Center, Durham; Georgetown University-Howard University Comprehensive Cancer Program, Washington, D.C.; Fred Hutchinson Cancer Research Center affiliated with the University of Washington, Seattle.

Illinois Cancer Council, Chicago; the Johns Hopkins Medical Institutions, Baltimore; the Mayo Foundation, Rochester, Minnesota; University of Southern California (with the Birmingham); University of Miami School of Medicine, Miami; University of Southern California (with the Los Angeles County Department of Hospitals), Los Angeles; the University of Wisconsin Medical Center, Madison; and Yale University Medical School, New Haven.

Three other institutions were recognized as having Comprehensive Cancer Centers at the time of enactment of the National Cancer Act

of 1971: M.D. Anderson Hospital and Tumor Institute, Houston; Memorial Sloan-Kettering Cancer Center, New York; and Roswell Park Memorial Institute Buffalo.

NCI supports specialized cancer centers to conduct research in specialized or well defined areas, such as chemotherapy or pediatrics; clinical cooperative groups to treat patients with various forms of cancer under specified research protocols; and organ-site task forces to study laboratory and clinical aspects of cancer of the breast, lung, large bowel, bladder, and prostate.

Large numbers of patients hopefully will benefit from the treatment methods resulting from the various research and demonstration activities. The physicians participating in the centers programs, cooperative research trials, and task forces will use the treatments on a non-research basis for many cancer patients not participating in studies.

International cancer research data bank program

Another of NCP mandates for which progress is reported is the implementation of a major new communication activity, the International Cancer Research Data Bank (ICRDB) program. Its objective is to actively promote and facilitate worldwide exchange of information between cancer scientists and dissemination of information to all physicians, through cancer centers and other appropriate organizations.

There will be four major segments of the ICRDB program: cancer

information dissemination and analysis centers, scientist-to-scientist communication, clinical cancer data methods, and special cancer information projects.

At the present time, a specialized cancer database has been developed by the National Library of Medicine in collaboration with NCI, and made available to scientists.

The system, called Cancerline, contains about 15,000 cancer chemotherapy abstracts; these are now available for all on-line search throughout the United States to all scientists with access to a terminal linked to the NLM computer network.

In addition, the data can be re-packaged to the special needs of practicing physicians, managers, educators, and other audiences. These abstracts represent the best published information, and can be immediately retrieved with print-out if desired. This system permits search according to author, disease, drug, and other factors.

The ICRDB program also is negotiating an interagency agreement with the Smithsonian Science Information Exchange to produce an additional 10,000 descriptions of ongoing cancer research projects.

At the same time, negotiations are under way with the International Union Against Cancer for expanding the coverage of its clinical protocol registry and computerization of its information. The additional information obtained through these agreements will be added to the NLM data bank and be available for on-line searching throughout the United States.

In conclusion, we are constantly aware that the NCP is unique for the

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In recognition of the fact that the best defense against death due to cancer is early diagnosis, the cancer control program placed a major emphasis on detection projects.

”

— Frank Rauscher

federal government and for medicine. It has responsibility not only to conduct and foster cancer and related research, but to coordinate all cancer research done in the United States and to establish interrelationships in other countries as well.

Furthermore, it has an additional important responsibility to encourage the immediate application of knowledge gained from research to the cancer patient and the prospective cancer patient.

The legislative mandates have also provided an unprecedented opportunity for an intensive, coordinated attack on cancer, which is now in full operation.

Remarkable recent progress has been made in detection of cancer risk for some types of cancer, in early diagnosis, in treatment and rehabilitation, and in prevention.

All told, the outlook is brighter than it was for reducing the impact of cancer from its present status as the most dreaded disease of Americans.



Accelerating Anticancer Agent Development and Validation

The 2021 Accelerating Anticancer Agent Development and Validation (AAADV) Workshop will be held September 29 to October 1, 2021.

Sponsored by



For the past 17 years, leaders in clinical and translational cancer research from academia, industry, government and non-profit patient advocacy sectors have convened each spring in Bethesda, Maryland, for the AAADV Workshop, a unique forum designed to speed cancer treatments to patients. AAADV has been the only workshop held in collaboration with the U.S. Food and Drug Administration (FDA) designed specifically to help participants understand and negotiate the drug development approval process so that effective and safe cancer treatments can reach patients more quickly. Participants gain valuable insights on negotiating the pathway of successful drug development and hone their strategic planning skills with a focus on target validation and identification of patient benefit.

IMPACT OF COVID

Due to the COVID19 pandemic, the planned 2020/2021 AAADV workshop was postponed to 2021, and has moved to the fall. These new dates minimize conflict with the annual spring meetings organized by sponsors such as AACR and ASCO. In addition to the new fall dates, a new online presence will enable participants to engage in the interactive workshop in a variety of venues including small group sessions with moderated discussions, keynote lectures plenary sessions and facilitated case studies of successful drug applications.

PRE-WORKSHOP CORE CURRICULUM

As in years past, a September 28, 2021 pre-workshop FDA Core Curriculum will be offered to early career clinicians, scientists, and patient advocates interested in an improved understanding of the drug development process and the pathway to US marketing approval by the FDA.

REGISTRATION, SCHOLARSHIPS AND FEE WAIVERS

Registration is currently open online at AAADV.org. **Scholarships:** Scholarships for 100% of the registration fee are available for patient advocates, all trainees and all students, and scholarships for 90% of the registration fee are available for all academic faculty. **Fee waivers:** 100% registration fee waivers are available for government employees of the FDA and NIH.

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IN THE ARCHIVES



Answering big questions: Beatrice Mintz, Donald Pinkel, Baruch Blumberg, Irwin Rose

Spotlight Article



Query Theory: A Tribute to Beatrice Mintz, PhD

By Fox Chase Cancer Center | May 4, 2021

Big questions. That's what Beatrice Mintz, PhD, the former Jack Schultz Chair of Basic Science at Fox Chase Cancer Center, has dedicated her career to answering. Small questions, in her opinion, are not worth the time or effort. As a result of this philosophy—and through sheer force of personality—Mintz's opus, according to Jonathan Chernoff, MD, Chief Scientific Officer at Fox Chase, contains the platforms

of several fields, including developmental genetics, gene-transfer technology, epigenetics, and the tumor microenvironment.

“To pioneer in one major area of science is remarkable. But more? Otherworldly,” he says. An elected member of the National Academy of Sciences since 1973, Mintz, now 97, has collected scientific honors that are coveted, prestigious, and rare. But accolades were never the point. The point, Mintz says, is “simply the pursuit of a series of questions that I've enjoyed answering.”

Announcing the Donald Pinkel Archive



In collaboration with Donald Pinkel's daughter, Mary Pinkel, the Cancer History Project is preserving and republishing materials from his personal archive. Pinkel, the founding director and CEO of St. Jude Children's Research Hospital, is also celebrated by Roswell Park Comprehensive Cancer Center in the Cancer History Project.

Personal letters: Mixed reviews of Donald Pinkel's article on Childhood Lymphocytic Leukemia

By Cancer History Project | May 6, 2021

In 1970, Donald Pinkel's article, “Drug Dosage and Remission Duration in Childhood Lymphocytic Leu-

kemia,” received mixed reviews. The paper, later published in Feb. 1971 in *Cancer*, was rejected by the *Journal of Pediatrics*. However, in a personal letter, Emil Frei lauds it as “an extremely important article.”

Both letters are reproduced [here](#) and available for download.

Primary source: Donald Pinkel's June 1, 1986 Kettering Prize acceptance remarks
By Cancer History Project | May 6, 2021



There needs to be renewed enthusiasm and determination to extend nutrition and health services to all children in need, regardless of the socio-economic, ethnic, geographic or immigration status of their parents.

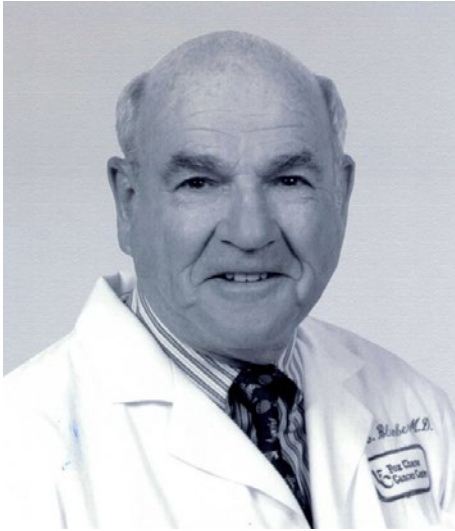


— Donald Pinkel, June 1, 1986

Primary source: Donald Pinkel's June 6, 1986 Kettering Prize remarks: Curing Children of Leukemia

By Cancer History Project | May 6, 2021

People



Baruch S. Blumberg, MD, PhD, Wins Nobel Prize in Medicine for His Discovery of the Hepatitis B Virus

By Fox Chase Cancer Center | May 6, 2021

Fox Chase Cancer Center Remembers Nobel Laureate and Scientist Irwin 'Ernie' Rose

By Fox Chase Cancer Center | May 5, 2021

Institutions

National Breast Cancer Coalition Accomplishments and Milestones

By National Breast Cancer Coalition | May 7, 2021

Rutgers Cancer Institute's 2019 redesignation: New Jersey's only Comprehensive Cancer Center

By Rutgers Cancer Institute of New Jersey | May 4, 2021

This column features the latest posts to the Cancer History Project by our growing list of contributors.

The Cancer History Project is a free, web-based, collaborative resource intended to mark the 50th anniversary of

the National Cancer Act and designed to continue in perpetuity. The objective is to assemble a robust collection of historical documents and make them freely available.

Access to the Cancer History Project is open to the public at CancerHistoryProject.com. You can also follow us on Twitter at [@CancerHistProj](https://twitter.com/CancerHistProj).

Is your institution a contributor to the Cancer History Project? Eligible institutions include cancer centers, advocacy groups, professional societies, pharmaceutical companies, and key organizations in oncology.

To apply to become a contributor, please contact admin@cancerhistoryproject.com.

IN BRIEF



Chanita Hughes-Halbert named associate director for cancer equity at USC Norris



Chanita Hughes-Halbert was named director for cancer equity at University of Southern California Norris Comprehensive Cancer Center, and professor and vice chair of research in the Department of Preventive Medicine at Keck School of Medicine.

Her appointment begins July 1, 2021.

Hughes-Halbert will join USC from the Medical University of South Carolina, where she is a professor of psychiatry and behavioral sciences, co-leader of the Cancer Control Program, holder of the AT&T Distinguished Endowed Chair at the Hollings Cancer Center and associate dean for assessment, evaluation and quality improvement at the College of Medicine.

Her work is focused on reducing the disparities in cancer outcomes that affect patients from underrepresented communities, with a primary focus on African American communities.

Hughes-Halbert has identified socio-cultural, psychological, genetic and environmental determinants of cancer health disparities and translates this information into interventions to improve health equity among racially and ethnically diverse populations, as well as other medically underserved groups.

Hughes-Halbert was elected to the National Academy of Medicine in 2017.

At her current post, Hughes-Halbert directs the Transdisciplinary Collaborative Center in Precision Medicine and Minority Men's Health. This program aims to develop medical strategies for minority men that are tailored to the specific social, genetic and environmental factors affecting each person's health, with a focus on cancer.

President Barack Obama appointed Hughes-Halbert to NCI's Board of Scientific Advisors in 2012, and in 2014 she joined the National Advisory Council of the National Human Genome Research Institute.

MD Anderson, Syntropy enter into a system technology agreement

MD Anderson Cancer Center, Syntropy and the Foundry Platform have entered into a technology collaboration to grow data science capabilities.

Building upon MD Anderson's institution's digital infrastructure, the Foundry platform adds to MD Anderson's growing ability to contextually integrate and draw clinically meaningful insights from vast quantities of data, including clinical, biospecimen, imaging, and other sources, while assuring appropriate use and data protections through state-of-the-art provenance and access controls.

By assembling and harmonizing the diverse data types and making them "similar" enough to analyze while highlighting their unique differences, MD Anderson researchers are able to more effectively find data and collaborate on research.

Hundreds of collaborators across diverse disciplines at MD Anderson already have conducted more than 50 projects in Foundry, with an initial focus on COVID-19 and its impact on cancer patients. Recognizing an urgent need to rapidly address research questions at the start of the pandemic, MD Anderson enabled its researchers to leverage the Foundry platform to generate insights from a common, curated, readily available source of aggregated COVID-19 data for cancer patients.

Research from this work will be presented at the 2021 American Society of Clinical Oncology annual meeting in June.

Through ongoing education and implementation efforts, MD Anderson will be conducting a strategic and systematic rollout to additional researchers on the platform and expanding access throughout the institution.

Additional opportunities exist to explore secure data collaborations with other academic and industry partners. MD Anderson also has submitted grant proposals using Foundry as an enabling platform for collaboration.

ASCO-ACCC piloting test tools to diversify cancer clinical trials

The American Society of Clinical Oncology and Association of Community Cancer Centers plans to test a research site assessment tool and implicit bias training program, both of which are designed to address one of the barriers to clinical trial participation: trials not routinely being offered by clinicians to eligible patients.

This work is part of an ASCO-ACCC initiative to establish evidence-based

practical strategies and solutions to help increase participation of people from historically underrepresented racial and ethnic communities in cancer treatment trials.

The collaboration is led by ASCO-ACCC steering group co-chairs Lori J. Pierce, ASCO president, and Randall A. Oyer, immediate past president of ACCC. The collaboration launched in July 2020 with a request for ideas to the oncology community seeking novel innovations to remedy this barrier.

"People with cancer and survivors have told us that whether a clinician discusses a clinical trial is the most important factor for patients considering participation," Pierce said in a statement. "Providing patients every option of care and treatment empowers them throughout their cancer treatment and helps keep them fully informed about their health. Increasing diversity of trial participants additionally improves the applicability of the results of the clinical trial among diverse populations."

ASCO and ACCC are recruiting over 40 oncology research sites to be a part of a pilot project to test the site assessment tool and/or the implicit bias training program. This initial phase will focus on screening and participation outcomes for patients who are Black and/or Hispanic/Latinx.

The assessment tool will evaluate mainly site structural and procedural factors that may impact patient screening and participation. The training will be a curriculum-based program, combined with interventional exercises for enrolling patients, with the opportunity to meet with other participating sites for an interactive, virtual discussion.

Selected sites will comprise a mix of small and large research sites at community- and academic-based oncology

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programs from diverse regions across the United States. Participating research sites will be offered a stipend for complete participation.

“More evidence is needed to identify factors that contribute to low clinical trial screening and enrollment rates for people with cancer, particularly those from underrepresented racial and ethnic communities,” Oyer said in a statement. “We are developing resources to support practices that want to enhance their screening and enrollment, and these two pilot studies will allow us to gather initial key findings to tackle this issue.”

This trial-run of the strategies will help to assess their feasibility and effectiveness across different research settings and will provide insights about their potential to help ensure that cancer treatment trials better reflect the racial and ethnic diversity of people living with cancer.

Interested practices should fill out the online interest application by June 11. After the pilot testing, ASCO and ACCC plan to make the resources available to the entire research community.

Naiyer Rizvi named CMO of Synthekine



Naiyer Rizvi was named chief medical officer of Synthekine Inc.

Rizvi most recently served as the Price Family Professor of Medicine, director of thoracic oncology and co-director of cancer immunotherapy at Columbia University Medical Center.

He will lead Synthekine's efforts in advancing its maturing pipeline through clinical investigation, the company said.

Rizvi's research into mechanisms of sensitivity and resistance to immunotherapy has laid the foundation to the understanding of clinical responses to immune checkpoint inhibitors. Rizvi conducted clinical studies of novel immunotherapy drugs and immunotherapy combinations, including the landmark study to demonstrate a correlation between mutations and neoantigens with durable benefit to immune-checkpoint blockade.

His clinical research has helped deliver FDA approvals of several landmark immunotherapies, including nivolumab in squamous lung cancer and pembrolizumab in non-small cell lung cancer.

He was recently research director of the Price Family Comprehensive Center for Chest Care at New York-Presbyterian Hospital.

Pearl McElfish named associate director of community outreach and engagement at UAMS Winthrop P. Rockefeller Cancer Institute

Pearl McElfish was named associate director of community outreach and engagement at the Winthrop P. Rocke-

feller Cancer Institute at the University of Arkansas for Medical Sciences.



McElfish's position will involve creating a state-wide community network to support rural and minority communities for cancer prevention, education, navigation to treatment and survivorship.

She previously was vice chancellor for the UAMS Northwest Regional Campus in Fayetteville.

McElfish is the founder of the Office of Community Health and Research and the Center for Pacific Islander Health at UAMS.

Her research focuses on reducing health disparities among rural and minority communities. She also conducts methodological research related to the conducting community-based participatory research and dissemination of findings to community stakeholders.

Pitt and IU researchers study cognitive dysfunction after chemotherapy

Researchers at the University of Pittsburgh School of Medicine and Indiana University received a five-year, \$3 mil-

lion grant from NCI to study cognitive dysfunction after chemotherapy.

Robert Ferguson, a clinical psychologist in the Biobehavioral Cancer Control Program at UPMC Hillman Cancer Center, developed a cognitive behavioral therapy called Memory and Attention Adaptation Training, or MAAT, which will be the focus of the first large-scale, multi-center study funded by the grant.

Ferguson is collaborating with Brenna McDonald, professor of radiology and imaging sciences at IU School of Medicine and a member of the Cancer Prevention and Control research program at the Indiana University Melvin and Bren Simon Comprehensive Cancer Center, to test MAAT and supportive therapy to determine the effects of both on improving memory problems and emotional resilience among breast cancer survivors.

MAAT is cognitive behavioral therapy in which survivors work with a psychologist to identify specific situations at home or on the job where memory problems are likely to occur and to learn specific strategies to address those issues. In supportive therapy, survivors also work with the psychologist, but they explore emotional strengths and build resilience in coping with memory problems and cancer survivorship in general. Both therapies consist of eight telehealth visits of 45-minutes each.

"The survivor and therapist review what currently is known—and not known—about memory problems associated with cancer and cancer treatment," Ferguson, assistant professor of hematology/oncology in Pitt's School of Medicine, said in a statement. "They also address distress and aggravation that can accompany memory difficulty in daily life to identify the specific situations and apply strategies to reduce or mitigate memory problems."

Both therapies have been designed and tested as a telehealth-delivered therapy to reduce travel and time burdens on survivors and families. While it can be delivered in office, too, many survivors have exhausted their paid time off work and may have used much of their savings to help pay for cancer treatment, so the telehealth option often is preferred.

With the latest grant, the researchers will look at the functional MRI of participants to evaluate underlying changes in brain activation patterns that are believed to be associated with treatment. In previous research, Ferguson and McDonald have demonstrated enhanced working memory following treatment among individuals with traumatic brain injury.

The two researchers are building on a collaboration that started when they were both faculty at Dartmouth College nearly two decades ago. They conducted small clinical trials and pilot studies on the cognitive symptoms in breast cancer patients, which led to the development of MAAT.

Pitt and IU each hope to evaluate 100 women, half of whom will receive MAAT while the others receive the supportive therapy.

AICR awards \$1.15 million for cancer prevention and survivorship

Seven researchers have received a total of \$1.15 million from the American Institute for Cancer Research to study the relationship between diet, nutrition, physical activity, body weight and cancer prevention and survivorship.

The diverse research topics focus on cancers in women and men and identify a wide array of the most common risk

factors and their impact on prevention, survivorship and recurrence.

The 2021 AICR research grantees are:

- Christine Brainson, University of Kentucky Research Foundation: How dietary methionine influences lung cancer initiation and chemosensitivity,
- Michael De Lisio, University of Ottawa: Aberrant myelopoiesis as a novel mechanism for the differential effects of obesity and exercise on colorectal cancer risk,
- Brian Focht, Ohio State University: Addressing obesity to reduce cancer risk and health disparities in underserved populations,
- Christopher Haiman, University of Southern California: Interactions of polygenic risk score with BMI, physical activity and dietary patterns on risk of breast, colorectal and prostate cancer in the Multi-ethnic Cohort,
- Xin Lu, University of Notre Dame: Overcome resistance to cancer immunotherapy with ketogenic diet-induced epigenetic reprogramming,
- Scherezade Mama, MD Anderson Cancer Center: Feasibility of an adapted multicomponent physical activity intervention to reduce psychosocial distress in rural adults following cancer diagnosis; and
- Erik Nelson, University of Illinois at Urbana-Champaign: Determining the impact of different preparation techniques of foods high in cholesterol on breast cancer progression.

AICR has contributed more than \$110 million to support over 750 studies conducted at universities, hospitals and research centers across North, South and Central America.

\$12 million DoD grant establishes Convergent Science Virtual Cancer Center

Dan Theodorescu and Peter Kuhn have received the inaugural \$1.25 million Virtual Cancer Center Director Award from the Department of Defense.

Additionally, the DoD, Congressionally Directed Medical Research Programs, Peer Reviewed Cancer Research Program will invest more than \$12 million combined for the virtual cancer center and scholars.



Dan Theodorescu, director of Cedars-Sinai Cancer, and Peter Kuhn, director of the Convergent Science Institute in Cancer at the USC Michelson Center for Convergent Bioscience, were awarded the inaugural \$1.25 million Virtual Cancer Center Director Award in April to establish the center.

Theodorescu will serve as director of the new center; Kuhn will hold the post of deputy director.

Experts at the virtual cancer center will guide emerging scholars from diverse science backgrounds and institutions

to accelerate their research and careers. Each investigator will separately receive funding to carry out their specific research, while the center's \$1.25 million total annual award will cover planning, training and administrative expenses.

It is the only such award granted in the United States. The center is scheduled to launch in September.

"This grant is significant for several reasons—most importantly, its focus on young investigators," Theodorescu, PHASE ONE Foundation Distinguished Chair in Oncology at Cedars-Sinai, said in a statement. "Junior researchers are often funded but fail because they lack connections to collaborators in and out of their fields. This grant will help maximize their success by broadening these connections in strategic and synergistic ways."

Theodorescu, an international leader in bladder cancer biology and therapy, is a professor of Surgery and Pathology and Laboratory Medicine at Cedars-Sinai and a member of the National Academy of Medicine.

In collaboration with members of an advisory board, the virtual cancer center leaders will identify investigators' scientific and career development roadblocks and then help build a team of national experts to guide their research. The advisory board will include the investigators' career guides, patient advocates, and a special advisor on military health.

Convergent science integrates the knowledge, methodology and expertise from biology, chemistry, physics, technology, and engineering to form novel frameworks to spark scientific discovery and innovation. Convergent research is similar to an interdisciplinary approach to problem-solving, said Kuhn, a dean's professor at the USC Dornsife College of Letters, Arts and Sciences.



A founding member of the USC Michelson Center, Kuhn is also a professor of medicine, biomedical engineering, and aerospace and mechanical engineering at USC.

“Our vision is to transform the fundamental cancer research culture, with a focus on training the next-generation investigator and to maximize their impact on patient outcomes,” Kuhn said.

For its inaugural grant, the Department of Defense has selected eight scholars nationwide to join the virtual cancer center. Theodorescu and Kuhn have expertise in using convergent science for cancer research and broad experience operating large-scale research enterprises.

Theodorescu and Kuhn will use Adaptive Catalysis of Convergent Research Training, or ACERT, a system they developed to design a personalized research and professional development roadmap for each researcher. The training process also will include workshops on broad opportunities in convergent science and specific training on narrower topics.

The virtual cancer center’s scholars also will have access to the Convergence Council, a group of established investigators from multiple disciplines who will use their extensive professional networks to facilitate new connections and collaborations.

Cancer research groups push emergency funding to restart clinical trials in infrastructure package

A group of more than 50 cancer research-focused organizations are urging Congress to include \$10 billion in emergency funding to restart cancer research and clinical trials at the National Institutes of Health stalled by the coronavirus pandemic.

In a [letter](#) sent to lawmakers, members of the One Voice Against Cancer coalition say without the additional resources in the forthcoming American Jobs Plan, promising research will languish and potentially be lost entirely.

“The pandemic’s impact on cancer research has been severe. Early shutdowns forced research to come to an abrupt halt, and restarting trials has required implementing new protocols, procuring personal protective equipment and sometimes restarting work altogether that otherwise could not be resumed,” Lisa Lacasse, president of the American Cancer Society Cancer Action Network, said in a statement. “The cost of these disruptions has been significant and threatens to jeopardize progress in the effort to reduce our country’s cancer burden for years to come.”

“Clinical trials are often the best and sometimes only course of treatment for patients in need of care. On behalf of all cancer patients, survivors and their families, we urge Congress to include this additional NIH funding in the American Jobs Plan and ensure medical research can keep moving forward without delay.”

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Researchers find increased risk of mortality for Arizona's Hispanic and Native American kidney cancer patients

Research from the University of Arizona Health Sciences shows that advanced-stage kidney cancer is more common in Hispanic Americans and Native Americans than in non-Hispanic whites, and that both Hispanic Americans and Native Americans in Arizona have an increased risk of mortality from the disease.

“We knew from our past research that Hispanic Americans and Native Americans have a heavier burden of kidney cancer than non-Hispanic whites,” said Ken Batai, a Cancer Prevention and Control Program research member at the UArizona Cancer Center and re-

search assistant professor of urology in the College of Medicine—Tucson. “But we also know that around 90% of the Hispanic population in Arizona is Mexican American—either U.S.-born or Mexican-born—and we do not think this subgroup is well-represented in the national data.”

With funding from NCI, Batai led a team of UArizona Cancer Center researchers that examined data from the National Cancer Database and the Arizona Cancer Registry to look for disparities in surgical treatment of kidney cancer. They also investigated the possibility that delayed treatments may result in advanced-stage kidney cancer, which has been associated with high mortality rates in Hispanic Americans and Native Americans.

The paper, “Renal Cell Carcinoma Health Disparities in Stage and Mortality among American Indians/Alaska Natives and Hispanic Americans: Comparison of National Cancer Database and Arizona Cancer Registry Data,” was published in the journal *Cancers*.

The study found that Arizona's Hispanic Americans are about two times more likely than non-Hispanic white people to have advanced-stage kidney cancer and have nearly a two times higher risk of mortality from early-stage kidney cancer. Similarly, Native Americans are about 30% more likely to have advanced-stage kidney cancer and face a 30% increased risk of mortality from early-stage kidney cancer.

These findings suggest that observed disparities in kidney cancer mortality risk cannot be explained by delays in treatment.

The researchers utilized state data to organize Hispanic Americans into various subgroups, including U.S.-born Mexican Americans. They determined this group to have a three times higher risk of mortality compared with non-Hispanic white Americans. National cancer statistics do not break down subgroups within the general Hispanic population, thus risks to U.S.-born Mexican Americans living in Arizona may be understated in national reporting.

Batai attributes the discrepancy in national versus state data to the data-collection process. The National Cancer Database relies on hospital-based reporting, whereas the state registry is population-based. Many small hospitals and clinics in rural settings may not report to the National Cancer Database, which could explain the misrepresentation of Hispanic Americans in Arizona.

“To this point, there has been no research documenting this disparity in Hispanic Americans,” Batai said in a statement. “This can be very useful information to share with primary care providers and urologists who may not yet be aware.”

NCI-MATCH has 12 open arms awaiting patients with advanced or rare cancers

The NCI-Molecular Analysis for Therapy Choice (NCI-MATCH) cancer clinical trial is expanding with the opening of a new treatment arm.

The addition, Arm Z1M, is a single-arm phase II study of a two-drug combination, relatlimab and nivolumab, both immunotherapies. To be eligible, patients must have mismatch repair deficiency on genomic testing and tumors that express the LAG-3 protein, a cancer immunotherapy target.

The cancer must also have progressed on anti-PD-1/PD-L1 immunotherapy. The addition brings the number of available treatment arms in NCI-MATCH to 12. The ECOG-ACRIN Cancer Research Group and NCI are co-leading the trial, which is being conducted in the NCI National Clinical Trials Network.

“The trial is ongoing and continuing to provide critical information on possible cancer therapies,” Peter J. O’Dwyer, ECOG-ACRIN group co-chair, who also co-leads the NCI-MATCH trial, said in a statement. “Each arm—and every patient who participates—is contributing valuable information on responsive versus unresponsive cancer types, especially in rare cancers where there are little or no data available.”

The largest precision medicine cancer clinical trial to date is NCI-MATCH with 39 single-arm phase II treatment arms. Researchers are locating patients for the 12 remaining arms as the results are published or being analyzed for the other arms.

NCI-MATCH enrolls patients with any type of advanced solid tumor, lymphoma, or myeloma that has progressed on standard treatment, or patients with rare types of cancer for which there is no standard treatment.

“With the addition of Z1M, the open arms in NCI-MATCH address a range of 12 unique molecular targets and corresponding drugs that have evidence they work against that target,” O’Dwyer said.

LAG-3 is a checkpoint inhibitor pathway. Relatlimab is a LAG-3-blocking

antibody that binds to LAG-3 on T cells, restoring effector function of exhausted T cells. LAG-3 assessment is based on protein expression, measured by immunohistochemistry.

The 12 open arms and molecular targets are available at ecog-acrin.org and listed here:

- BRAF V600E or BRAF V600K mutations (dabrafenib and trametinib)
- CDK4 or CDK6 amplification (palbociclib)
- cKIT mutations (sunitinib malate)
- EGFR mutations (afatinib)
- EGFR T790M (AZD9291)
- LAG-3 expression and dMMR status (relatlimab and nivolumab)
- MET amplification (crizotinib)
- MET exon 14 deletion (crizotinib)
- mTOR mutations (TAK-228)
- NTRK fusions (larotrectinib)
- PTEN loss without PIK3CA mutations (copanlisib)
- TSC1 or TSC2 mutations (TAK-228)

“NCI-MATCH bases trial eligibility on molecular characteristics instead of organ site, allowing the inclusion of people who previously could not get access to agents that target these tumor abnormalities,” Lyndsay Harris, translational co-chair of NCI-MATCH, and associate director of the Cancer Diagnosis Program, Division of Cancer Treatment and Diagnosis at NCI, said in a statement.

Tumor testing by an NCI-designated lab is the only pathway for patients at participating sites to enroll in the trial. Physicians and staff at participating trial sites order standard tumor tests from one or more of the 11 participating commercial testing laboratories to guide their patients’ clinical care.

The labs flag test results as potential trial candidates and notify the oncologist when patients’ tests reveal aberrations included in the NCI-MATCH trial.

Commercial laboratories are:

- Foundation Medicine, Inc.
- Strata Oncology, Inc.
- Caris Life Sciences
- Tempus Labs Inc.
- Ashion Analytics, LLC
- CellNetix Pathology and Laboratories
- GenPath (BioReference Laboratories Inc.)
- NeoGenomics Laboratories Inc.
- OmniSeq Inc.
- Quest Diagnostics Inc.
- The Jackson Laboratory

“The referral process is working very well - so far, the labs have identified nearly 700 trial candidates,” O’Dwyer said. “The labs are reviewing thousands of patient tests every month, casting a wide net for potential patients.”

Molecular testing for cancer treatment selection is a common practice. Medicare and most insurance companies cover it.

The NCI-designated lab network includes not only 11 commercial labs but also 17 academic labs, which generally test their own patient populations.

“NCI-MATCH is the only trial to build an extensive network of testing laboratories—necessary to find patients for a study where molecular features determine eligibility,” Harris said. “Unlike other studies that evaluate the use of next-generation sequencing, NCI-MATCH is investigating both approved and experimental drugs broadly across

cancer types and beyond what we currently know about these molecular targets.”

Generally, each treatment arm aims to enroll 35 patients. However, four of the 12 current arms have additional slots ready and available, knowing that the labs will identify more potential candidates for these arms than those with less prevalent targets. The four expansion arms are targeting BRAF V600E or BRAF V600K mutations, CDK4 or CDK6 amplification, MET amplification, and TSC1 or TSC2 mutations.

A promising efficacy signal is also the reason for expanding Arm H. This arm investigates the selective BRAF inhibitor dabrafenib and the MEK1/2 inhibitor trametinib in patients whose tumors harbor BRAF V600E or BRAF V600K mutations. The initial cohort met its primary endpoint, with an objective response rate of 38% ($P < .0001$) in a mixed histology, pretreated cohort of 29 evaluable patients (Salama AKS. *J Clin Oncol.* 2020 August 06).

“We hope to identify 50 more patients for Arm H to better define the broad applicability of the recently-published positive findings in the initial cohort,” O’Dwyer said.

Nearly 1,100 cancer centers and community hospitals are participating in NCI-MATCH. There are sites in every U.S. state, the District of Columbia, and Puerto Rico, and trial leaders encourage more clinical sites to open the trial.

NCCN releases new patient guidelines on anemia and neutropenia

The National Comprehensive Cancer Network has published new guidelines on anemia and neutropenia.

The paper, titled “Anemia and Neutropenia, Low Red and White Blood Cell Counts,” is funded by the NCCN Foundation and endorsed by The Leukemia and Lymphoma Society.

The free information source is designed to help people living with cancer and caregivers recognize symptoms of blood cell deficiencies caused by cancer or chemotherapy—and increase engagement with their oncology care team about management and support.

Chemotherapy and certain cancers can slow the body’s production of red blood cells, platelets, and white blood cells. Anemia can cause tiredness and headaches, while neutropenia and thrombocytopenia often go unnoticed before reaching severely low levels. All three conditions can cause dangerous complications or require delays in cancer treatment.

Elizabeth Griffiths, associate professor at Roswell Park Comprehensive Cancer Center, chairs the NCCN Clinical Practice Guidelines Panel for Hematopoietic Growth Factors, which is responsible for maintaining and updating the clinical guidelines from which the patient guidelines are derived.

“It’s important for patients getting chemotherapy to be aware that there are supportive treatments, to learn about what they offer, and to know what to expect,” Griffiths said in a statement. “Depending on the patient’s situation, there are pluses and minuses for treatments like medications or growth factors, and the patient guidelines aim to present balanced information on these options in a patient-friendly manner.”

There are several options available to help patients with anemia and neutropenia. Treatments can range from simple rest and careful monitoring, to medications or infusions of biological agents (growth factors) that help the body produce more blood cells.

The new NCCN Guidelines for Patients outline the causes of anemia and neutropenia as well as warning signs and potential management options that patients and caregivers can discuss with physicians.

The publication offers important information in accessible, easy-to-understand language to help patients play an active role in their cancer care decisions. The patient guidelines are based on the renowned clinical NCCN Guidelines which are created by multidisciplinary teams of experts from across NCCN Member Institutions and used by health care professionals all over the world.

UNC researchers examine approaches to deliver radiation to tumors while sparing healthy tissue

A comprehensive review by University of North Carolina researchers and colleagues highlights the optimal ways that focused, high-dose radiation can be delivered to various types of tumors while sparing normal tissue and mitigating long-term side effects.

The review was reported as a special issue in the *International Journal of Radiation Oncology, Biology, Physics*.

This analysis was based on an exhaustive review of data and the literature published largely in the past decade. It updates an earlier review that primarily focused on the effects of conventional radiation therapy on normal tissue.

This new review also includes important analyses of how well high-dose radiation can destroy small tumors, such as small brain lesions, lung lesions, and cancers that metastasize to other parts of the body.

“We undertook this review because we have an ever-increasing knowledge about the dose and volume of tissue to which we can direct radiation to both eradicate tumors while also safeguarding the surrounding normal tissue,” Lawrence B. Marks, chair of the UNC Department of Radiation Oncology and Sidney K. Simon Distinguished Professor of Oncology Research at UNC Lineberger Comprehensive Cancer Center, said in a statement. “Today, we are better able to tailor radiotherapy to optimize benefit and minimize risk.”

Conventional radiotherapy, developed nearly a century ago, often broadly hits the tumor and some healthy tissue surrounding the tumor, and is administered in low daily doses, usually over many weeks.

For some patients, their cancer can be treated with more advanced techniques, called stereotactic body radiation therapy, or radiosurgery, that target smaller areas of tissue that are primarily cancerous, treating them at a high dose per day and usually administered for one to five days. These radiosurgery treatments are the focus of this recently published report.

“New computational methods and machines allow us to deliver radiotherapy much more accurately today, allowing us to limit the area where the radiation is targeted, thereby giving us the ability to increase the dose per day,” Marks said. “However, at this point in time we can only use this approach for smallish-sized tumors, but newer techniques may allow us to extend this approach to larger tumors as well.”

The next review will be done when there are discernable shifts or changes in treatment practice patterns, the authors said. However, there is a large review due out next year, in which Marks is participating, that is focusing on use of radiotherapy in pediatric cancers. Radiotherapy is often used sparingly in

children due to later-in-life side effects, therefore making it important to know when best to use these treatments.

City of Hope opens phase II clinical trial to test if intake of mushroom-powder tablets could slow the progression of prostate cancer

City of Hope is recruiting patients for a phase II clinical trial to investigate whether pills containing white button mushroom extract could regulate the immune system, affecting prostate-specific antigen levels to either remain stable or decline.

Heightened levels of PSA in men may indicate the existence of prostate tumors.

Shiuan Chen, the Lester M. and Irene C. Finkelstein Chair in Biology, has been investigating the potential beneficial effects of white button mushroom (*Agaricus bisporus*) at City of Hope for about 20 years. His translational preclinical and clinical research has found that this “bioactive food” available in most supermarkets might prevent or slow the spread of prostate and breast cancers.

The common fungus appears to block the activity of dihydrotestosterone, a strong form of the male hormone.

“White button mushroom, like green tea, turmeric, soybean, rosemary and tomato, has been considered a ‘superfood’ with positive effects on human health,” Chen, co-investigator of the clinical trial, said in a statement. “What we’re trying to do is scientifically prove whether the hype is true. If white button mushroom can slow the progression of prostate cancer, we want to know what

the active agent is and what biological mechanisms are at work.”

City of Hope in Duarte, California, is leading the multisite phase II clinical trial, which will also recruit patients at City of Hope community locations (South Pasadena, West Covina, Rancho Cucamonga) and at John Wayne Cancer Institute in Santa Monica. This NCI study will seek to recruit 132 male participants who have recurrent prostate cancer following local therapy or who are undergoing active surveillance and have not yet received any therapy.

“This trial may reveal a possible alternative to or may obviate or delay the need for local or salvage treatments for prostate cancer. These standard-of-care therapies may cause significant short-term and long-term side effects such as incontinence and erectile dysfunction, or weight gain, hot flashes and osteoporosis,” principal investigator Clayton Lau, the Pauline & Martin Collins Family Chair in Urology and director of City of Hope’s Prostate Cancer Program, said in a statement.

Results from the phase I white button mushroom trial indicated that white button mushroom extract is safe and potentially effective against prostate cancer. About 36% of study participants had some decline in PSA levels after three months of white button mushroom tablet intake, and no dose-limiting toxicities were observed.

There were no negative side effects. Androgen deprivation therapy, on the other hand, is an approved therapy with side effects including fatigue, weight gain, muscle weakness, hot flashes, loss of libido, increased risk of diabetes and cardiovascular problems.

White button mushroom consumption seemed to stimulate the immune system into action and limited the growth of prostate cancer cells. Upon further research in the laboratory, City

of Hope scientists found that white button mushrooms contain chemicals that can block the activity of the androgen receptor in animal models, indicating this common fungus could reduce PSA levels. This research was recently published in *The Journal of Nutritional Biochemistry*.

The objective of the phase II trial is to assess if recurrent prostate cancer patients experience any PSA reduction at three months. The experimental groups will consume 14 grams of the mushroom-powder tablet per day—roughly two thirds of a container of white button mushrooms purchased from the supermarket. Tablets will be prepared from freeze-dried powder of white button mushrooms. Those in the control group (observation only) will be able to receive the mushroom tablet after three months.

In addition, for 12 months, the scientists will assess the relative change in PSA levels in men under active surveillance who have not received any localized prostate cancer treatment. Furthermore, scientists will look at biopsy material to identify what molecular changes are linked to intake of white button mushrooms.

DRUGS & TARGETS



Keytruda receives FDA Accelerated Approval for HER2-positive gastric cancer

FDA has granted accelerated approval to Keytruda (pembrolizumab) in combination with trastuzumab, fluoropyrimidine and platinum-containing chemotherapy for the first-line treatment of patients with locally advanced unresectable or metastatic HER2 positive gastric or gastroesophageal junction adenocarcinoma.

Keytruda is sponsored by Merck.

Approval was based on the prespecified interim analysis of the first 264 patients of the ongoing KEYNOTE-811 (NCT03615326) trial, a multicenter, randomized, double-blind, placebo-controlled trial in patients with HER2-positive advanced gastric or gastroesophageal junction adenocarcinoma who had not previously received systemic therapy for metastatic disease. Patients were randomized (1:1) to receive pembrolizumab 200 mg or placebo every three weeks, in combination with trastuzumab and either fluorouracil plus cisplatin or capecitabine plus oxaliplatin.

The main efficacy measure for this analysis was overall response rate assessed by a blinded independent review committee. The ORR was 74% (95% CI 66, 82) in the pembrolizumab arm and 52% (95% CI 43, 61) in the placebo arm (one-sided p-value < 0.0001, statistically significant). The median duration of response was 10.6 months (range 1.1+, 16.5+) for patients treated with pembrolizumab and 9.5 months (range 1.4+, 15.4+) for those in the placebo arm.

The adverse reaction profile observed in patients receiving pembrolizumab in study KEYNOTE-811 is consistent with the known pembrolizumab safety profile.

Tibsovo sNDA receives FDA acceptance and Priority Review for IDH1-mutated cholangiocarcinoma

FDA has accepted the company's supplemental New Drug Application for Tibsovo (ivosidenib tablets) as a potential treatment for patients with previously treated IDH1-mutated cholangiocarcinoma.

Tibsovo is sponsored by Servier Pharmaceuticals.

The sNDA was granted Priority Review, which accelerates the review time from 10 months to a goal of 6 months from the day of filing acceptance.

The sNDA acceptance is supported by data from the ClarIDHy study, the first and only randomized phase III trial for previously treated IDH1-mutated cholangiocarcinoma. A presentation of the data will be presented at the American Society of Clinical Oncology annual meeting June 4-8.

Tibsovo is approved in the U.S. as monotherapy for the treatment of adults with IDH1-mutant relapsed or refractory acute myeloid leukemia and for adults with newly diagnosed IDH1-mutant AML who are ≥ 75 years old or who have comorbidities that preclude the use of intensive induction chemotherapy.

Opdivo sBLA receives FDA acceptance and Priority Review for adjuvant treatment for patients with muscle-invasive urothelial carcinoma

FDA has accepted the supplemental Biologics License Application for Opdivo (nivolumab) for the adjuvant treatment of patients with surgically resected, high-risk muscle-invasive urothelial carcinoma, based on results from the CheckMate -274 trial.

FDA granted the application Priority Review and assigned a Prescription Drug User Fee Act goal date of September 3, 2021.

The filing was based on results from the pivotal CheckMate -274 trial, the first positive phase III trial of an immunotherapy in this setting. In the trial, Opdivo demonstrated a statistically significant and clinically meaningful increase in disease-free survival vs. placebo, regardless of patients' PD-L1 expression levels.

Opdivo was generally well-tolerated, with a safety profile that was consistent with previously reported Opdivo studies in patients with solid tumors. Results from the primary analysis of CheckMate -274 were presented in an oral presentation during the American Society of Clinical Oncology Genitourinary Cancers Symposium in February 2021.

CheckMate -274 is one of four positive phase III trials for Opdivo-based treatments in earlier stages of cancers, including muscle-invasive urothelial carcinoma (CheckMate -274), melanoma (CheckMate -238), esophageal/gastroesophageal junction cancer (CheckMate -577) and non-small cell lung cancer (CheckMate -816).

Xtandi approved by European Commission for men with metastatic hormone-sensitive prostate cancer

The European Commission has approved an additional indication for the oral once-daily therapy Xtandi (enzalutamide) for adult men with metastatic hormone-sensitive prostate cancer (mHSPC, also known as metastatic castration-sensitive prostate cancer or mCSPC).

Men diagnosed with mHSPC tend to have a poor prognosis, with a median survival of approximately three to four years, underscoring the need for new treatment options.

Xtandi is sponsored by Astellas Pharma Inc.

With this indication, enzalutamide is now the only oral treatment approved by the EC to treat three distinct types of advanced prostate cancer—non-metastatic and metastatic castration resistant prostate cancer and mHSPC.

The EC approval is based on results from the pivotal phase III ARCHES trial which evaluated enzalutamide in men with mHSPC.

Data from the ARCHES trial showed enzalutamide plus androgen deprivation therapy significantly reduced the risk of radiographic progression or death by 61% versus placebo plus ADT in men with mHSPC (n=1,150; hazard ratio [HR]=0.39 [95% confidence interval: 0.30-0.50]; P<0.0001).

The safety analyses of the ARCHES trial appear consistent with the safety profile of enzalutamide in previous clinical trials in CRPC. In ARCHES, Grade 3 or greater adverse events

The EC marketing authorization for enzalutamide in men with mHSPC is applicable to European Union member countries, and is also valid in Iceland, Norway and Liechtenstein.

Janssen submits Marketing Authorization Application to EMA seeking approval of cilta-cel for relapsed and/or refractory multiple myeloma

The Janssen Pharmaceutical Companies of Johnson & Johnson has submitted a Marketing Authorization Application to the European Medicines Agency seeking approval of cilta-cel, an investigational B cell maturation antigen (BCMA)-directed chimeric antigen receptor T cell (CAR T) therapy, for the treatment of patients with relapsed and/or refractory multiple myeloma.

The application is supported by positive results from the ongoing phase Ib/II CARTITUDE-1 study, investigating the safety and efficacy of cilta-cel. The latest results were presented at the American Society of Hematology 2020 annual meeting. Clinical development is ongoing with patients enrolled globally in various studies, including sites in Europe, the United States of America, China and Japan.

In early 2021, EMA granted accelerated assessment for cilta-cel. Accelerated assessment is granted when a medicinal product is expected to be of major public health interest and a therapeutic innovation, and can significantly reduce the review timelines to evaluate an MAA.

A Biologics License Application seeking approval of cilta-cel for the treatment of relapsed and/or refractory multiple myeloma is currently under review by the FDA.

NCI TRIALS



NCI Trials for May 2021

The National Cancer Institute approved the following clinical research studies last month.

For further information, contact the principal investigator listed.

Phase I - PED-CITN-03

Phase 1 Trial of Hu5F9-G4 (Magrolimab) Combined with Dinutuximab in Children and Young Adults with Relapsed and Refractory Neuroblastoma or Relapsed Osteosarcoma

Cancer Immunotherapy Trials Network
Majzner, Robbie G.
(650) 723-5535

Phase II - ACNS2021

A Phase 2 Trial of Chemotherapy Followed by Response-Based Whole Ventricular & Spinal Canal Irradiation (WVSCI) for Patients with Localized Non-Germinomatous Central Nervous System Germ Cell Tumor

Children's Oncology Group
MacDonald, Shannon Michelle
(617) 726-5184

Phase II - EA2192

APOLLO: A Randomized Phase II Double-Blind Study of Olaparib Versus Placebo Following Adjuvant Chemotherapy in Patients with Resected Pancreatic Cancer and a Pathogenic BRCA1, BRCA2 or PALB2 Mutation

ECOG-ACRIN Cancer Research Group
Reiss Binder, Kim Anna
(215) 360-0735

Phase II - EA2201

A Phase II Study of Neoadjuvant Nivolumab Plus Ipilimumab and Short-Course Radiation in MSI-H/dMMR Locally Advanced Rectal Adenocarcinoma

ECOG-ACRIN Cancer Research Group
Ciombor, Kristen Keon
(615) 936-8422

Phase II - NRG-GY023

A Randomized Phase II Trial of Triplet Therapy (A PD-L1 Inhibitor Durvalumab (MED14736) in Combination with Olaparib and Cediranib) Compared to Olaparib and Cediranib or Durvalumab (MED14736) and Cediranib or Standard of Care Chemotherapy in Women with Platinum-Resistant Recurrent Epithelial Ovarian Cancer, Primary Peritoneal or Fallopian Cancer Who Have Received Prior Bevacizumab

NRG Oncology
Lee, Jung-min
(301) 443-7735

Phase II - PBTC-058

Phase 2 Study of Intraventricular Omburtamab-Based Radioimmunotherapy for Pediatric Patients with Recurrent Medulloblastoma and Ependymoma

Pediatric Brain Tumor Consortium
Karajannis, Matthias A.
(212) 639-3171

Phase III - NRG-BR007

A Phase III Clinical Trial Evaluating De-Escalation of Breast Radiation for Conservative Treatment of Stage I, Hormone Sensitive, HER2-Negative, Oncotype Recurrence Score ≤ 18 Breast Cancer (DEBRA)

NRG Oncology
White, Julia R.
(614) 688-7367

Phase Other - S2013

Immune Checkpoint Inhibitor Toxicity (I-CHECKIT): A Prospective Observational Study

SWOG
Gunturu, Krishna Soujanya
(781) 744-8400

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