

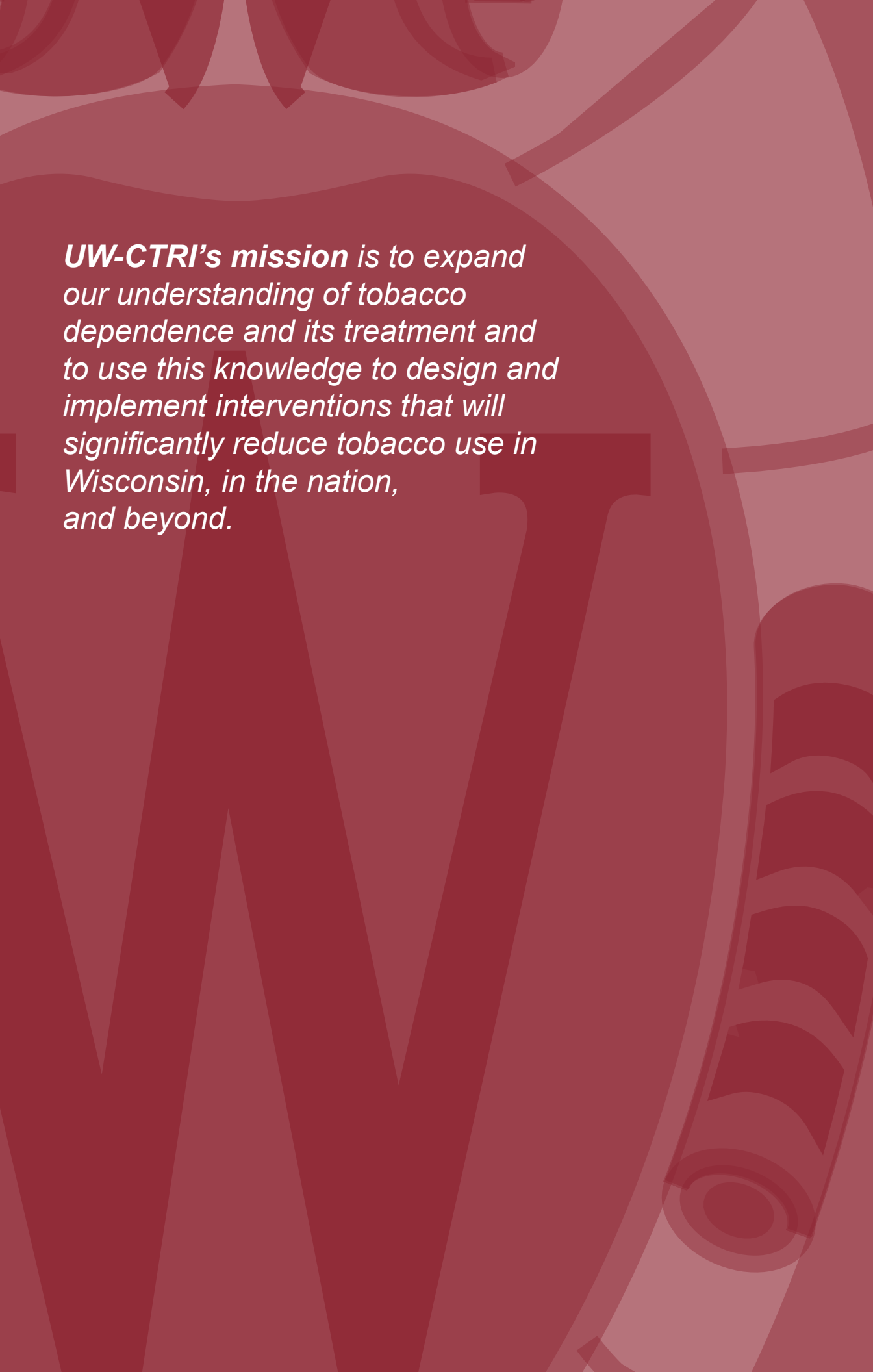


Center for Tobacco  
Research & Intervention

1992  
2012

**Twenty Years of Helping Smokers to Quit**



The background features a large, stylized, dark red letter 'W' that occupies the left and center portions of the frame. To the right of the 'W', there is a stylized illustration of a cigarette, also in shades of red, with smoke or ash suggested by curved lines. The overall color palette is monochromatic, using various tones of red.

***UW-CTRI's mission is to expand  
our understanding of tobacco  
dependence and its treatment and  
to use this knowledge to design and  
implement interventions that will  
significantly reduce tobacco use in  
Wisconsin, in the nation,  
and beyond.***

# From the Director

Dear Colleague,

I am pleased to share with you our 20<sup>th</sup> Anniversary Report, *Twenty Years of Helping Smokers to Quit*. It reflects our efforts to better understand tobacco dependence over the last two decades—and to translate that understanding to help patients quit.

From its inception in 1992, the University of Wisconsin Center for Tobacco Research and Intervention (UW-CTRI) has produced a dynamic synergy between research and practice. As you'll see in this report, this translational approach has: expanded our understanding of the nature of tobacco dependence; provided insights into the physical, mental, and lifestyle effects of tobacco use; and increased treatment effectiveness. Our policy work has changed the way health-care systems approach tobacco treatment so that more smokers can successfully quit. Since 2001, the Wisconsin Tobacco Quit Line has fielded nearly 200,000 calls, and our outreach team has worked with more than 22,000 healthcare professionals in virtually every clinic, health system, and hospital in Wisconsin.

Here are some of the highlights of UW-CTRI accomplishments during the past two decades:

- Published more than 300 research articles
- Helped more than 200,000 smokers in their quests to quit
- Advocated for tobacco use as a standard vital sign for all patients
- Contributed to the United States National Action Plan to reduce tobacco dependence
- Oversaw and developed the U.S. Public Health Service (PHS) Clinical Practice Guideline: *Treating Tobacco Use and Dependence* (1996, 2000, and 2008)
- Assisted with passing workplace smoking bans
- Created the No. 1 Web site for tobacco research listed on Google
- Helped patients from disadvantaged populations to quit smoking
- Generated more than \$100 million in grant funding

This list provides just a sample of the activities completed since 1992, some of which are detailed in this report. I'm proud that our Center is part of a broader tobacco-control program. We couldn't have accomplished all that you see here without our research collaborators and funders, to whom we at UW-CTRI are so grateful. We hope you enjoy this report and thank you for your interest in our commitment to helping smokers quit.

Sincerely,

Michael C. Fiore, M.D., M.P.H., M.B.A.  
Professor of Medicine  
Director, Center for Tobacco Research and Intervention  
University of Wisconsin School of Medicine and Public Health



**20**  
**YEARS**  
**1992-2012**

# Research

While much progress has been achieved and many smokers have been helped during the last two decades, much remains to be done. A society free from the suffering due to tobacco use is now within sight. The University of Wisconsin Center for Tobacco Research and Intervention (UW-CTRI) is nationally recognized for its 20-year history of ground-breaking tobacco research, as well as its efforts to translate those findings into tobacco cessation treatments. From its beginning, UW-CTRI has been multi-disciplinary—calling on the expertise of fields as diverse as medicine, psychology, statistics, epidemiology, and public health. This transdisciplinary approach has advanced our understanding of the nature of tobacco dependence, provided insights into the physical, mental, and lifestyle effects of tobacco use, and increased treatment effectiveness. UW-CTRI conducts tobacco research not only in its labs in Madison and Milwaukee, but also in healthcare settings throughout Wisconsin. The over-arching goals of the UW-CTRI research effort are to improve treatments and reduce the emotional, physical, and financial consequences of smoking. Our research has focused on three main topics.

## **Identifying Effective Treatments, Who Responds to These Treatments, and How Effective Treatments Work**

The Center has conducted research examining the effectiveness of numerous smoking cessation treatments, including: individual and group counseling, quitline counseling, mindfulness interventions, bupropion, varenicline, the nicotine patch, and combinations of medications. The Center has examined treatment effectiveness in different populations of smokers, including: Women, African-Americans, hospitalized patients, veterans, the poor, teenagers and young adults, those with mental illness and other drug addictions, and those with limited education. In addition, our research has identified mechanisms that can explain, in part, why treatments work.

## **Understanding How Nicotine Dependence Works**

UW-CTRI researchers have used experimental techniques to better understand the processes through which smokers develop tobacco dependence and are able to successfully quit. For example, our researchers explored the role of genetic factors in the development of tobacco dependence and quitting success. As part of this effort, we discovered how particular genes affect the likelihood that medications will help a smoker to quit. The Center has also long worked to understand the dynamics of withdrawal: How it changes over time and how it influences smoking-cessation outcomes. We have developed a questionnaire, the Wisconsin Smoking Withdrawal Scale (WSWS), to assess the six key dimensions of withdrawal: Anger, sadness, hunger, lack of concentration, craving, and sleep problems. UW-CTRI researchers have also developed a multidimensional tobacco-dependence measure, the Wisconsin Inventory of Smoking Dependence Motives (WISDM). This work used sophisticated analytic techniques to identify the core features of dependence, the “Primary Dependence Motives.”



## **Getting Treatments to Smokers Who Need Them**

The crux of UW-CTRI's mission is to improve the health and well being of smokers in Wisconsin and throughout the world. To that end, an important research focus has been translational research conducted in healthcare clinics. We have partnered with health systems to seamlessly integrate tobacco-cessation treatments into clinic workflow. This includes strategies to quickly identify smokers using electronic health records, and quickly enroll them into cessation treatment. This research has determined the feasibility,

efficacy, and cost-effectiveness of these treatments in primary-care settings. UW-CTRI researchers also offered treatments with minimal barriers to examine uptake, in several cases via the Wisconsin Tobacco Quit Line.

### **Recent Study: Wisconsin Smokers Health Study (WSHS)**

Tim Baker and Michael Fiore led this five-year National Institutes of Health P-50 study examining the best ways to quit smoking. Researchers found that combining bupropion or the nicotine patch with the nicotine lozenge gave smokers the best chance to quit. The study also examined the long-term health outcomes of smokers and found that quitting had almost immediate positive effects on blood vessels. In an additional study led by Sue Curry, Dean of the University of Iowa College of Public Health, researchers examined health-care cost benefits of quitting. Finally, WSHS researchers may have also pinpointed a reason many smokers struggle to quit: Smokers with a history of anxiety disorders are less likely to quit smoking. *Left: Moe Bird quit smoking thanks to the WSHS.*



### **Concluding Study: UW Partnership to Assist and Serve Smokers (UW-PASS)**

A \$9 million P-50 grant from the National Cancer Institute provided five years of funding for UW-CTRI to study quit-smoking treatments delivered in primary-care clinics throughout Wisconsin. This study, known as UW-PASS and led by Michael Fiore and Tim Baker, is delivering seamless, cutting-edge treatments for all smokers, including those who are ready to quit and those who aren't. The study includes smokers visiting Dean and Aurora primary-care clinics. Medical assistants at partnering clinics invite all smokers, whether they are willing to quit or not, to enter treatment to reduce tobacco use or quit. If the patient is interested, an electronic medical record message informs UW-CTRI staff, who conduct screening, orientation, patient visits and follow up. The electronic medical records are supported by Epic Systems and Cerner. *Right: Yvonne Sims quit smoking thanks to the UW-PASS.*



### **New Study: Wisconsin Smokers Health Study 2 (WSHS 2)**

UW-CTRI was awarded a new \$10 million grant from the National Heart, Lung, and Blood Institute to discover the best ways to help Wisconsin residents stop smoking, extending the original WSHS for five more years. It includes potentially life-saving tests—like artery scans that can signal impending risk of a stroke or heart attack—free of charge. Participants also get free coaching and medications to help them quit smoking. Michael Fiore, Dr. James Stein of UW Preventive Cardiology, and Tim Baker serve as lead investigators for this grant. Everyone from the previous WSHS—whether now smoking or not—is welcome to continue their participation. They will be joined by smokers new to the study who want to quit. Every participant who smokes will get state-of-the-art medication: 1) varenicline, 2) nicotine patch + nicotine gum/lozenge, or 3) just the nicotine patch. The first two medication treatments listed above have offered the highest quit rates and have never been compared head-to-head. According to Baker, “We’ll not only determine which works better, but also whether one approach works better with some types of smokers.” The researchers hope to enhance our knowledge of how to treat smoking optimally, how quitting smoking helps participants to reduce their risk of heart disease, stroke, and cancer, and the mechanisms by which these health benefits occur. To view UW-CTRI research papers, visit [www.ctri.wisc.edu](http://www.ctri.wisc.edu).





While UW-CTRI is primarily known for its research on how to quit smoking, the Center has also played a key role in tobacco-control history from a policy perspective.

In 1991, UW-CTRI Founder and Director Dr.

Michael Fiore wrote an article for the *Journal of the American Medical Association* that encouraged health-care providers to check the smoking status of every patient at every clinic visit. UW-CTRI led a national effort to systematically analyze the science regarding the best practices for tobacco treatment, resulting in the creation of the nation's first ever clinical practice guidelines. The Center assembled a national action plan for tobacco control—which eventually led to the establishment of a federal tobacco quitline. Dr. Fiore testified in the

Department of Justice's racketeering case against Big Tobacco. In addition, UW-CTRI has leveraged these policy

changes by visiting clinics and health systems to revolutionize both their technology and workflow with the goal of helping patients quit the nation's leading preventable cause of disease and death—tobacco use.

## Smoking as a Vital Sign and Electronic Referrals

Almost 35 million U.S. smokers visit primary care clinics annually, creating a tremendous opportunity to identify tobacco users and engage them in evidence-based cessation treatment. Much research at UW-CTRI focuses on seizing the health-care visit as an opportunity to help tobacco users to quit. Center Director Fiore pioneered the recommendation to include smoking status as a vital sign, resulting in a critical healthcare change—63% of clinicians in the United States now ask their patients about smoking status.

It's one thing to ask about tobacco use; it's another to follow up by offering effective treatments.

UW-CTRI has partnered with health systems across Wisconsin to integrate tobacco treatment into health-care delivery by seizing the potential of electronic health records (EHR). These system-level

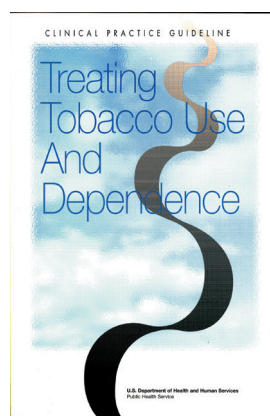
changes create a standardized workflow to quickly identify smokers who are ready to quit. Once identified, the EHR can provide a one-stop tool to guide the clinician as s/he helps smokers to quit—including medication orders, referrals to coaching, billing documentation, and patient-information sheets.



In one clinic study that used EHR to recruit smokers for treatment, more than 65% of them were invited to participate, and 12.4% of all smokers enrolled in treatment—either to reduce their smoking or to quit for good. If implemented broadly, systems-level changes such as these could result in up to 5 million smokers treated annually.

## Clinical Practice Guideline

Perhaps the Center's greatest influence during the last two decades has been through its leadership in the creation of clinical practice guidelines (1996, 2000, 2008) to treat tobacco dependence. The worldwide distribution and influence of this United States Public Health Service document has been phenomenal. More than 5 million copies of guideline-related materials have been distributed in English, Spanish, and other languages for the 2000 guideline alone. Beyond distribution is the effect of the guideline on clinical practice and tobacco-dependence treatment. The findings of the guideline have been replicated in studies all over the world, and are consistent with more than 20 reports issued by the Cochrane Collaborative, an independent non-profit organization. The U.S. guideline has also spawned numerous guidelines in other countries, ranging from Poland to New Zealand to Viet Nam.



The original guideline, developed in 1996 by the Agency for Healthcare Research and Quality (AHRQ), was updated in 2000 by a consortium that included researchers from the National Cancer Institute; Centers for Disease Control; Robert Wood Johnson Foundation; National Institutes on Drug Abuse; National Heart, Lung and Blood Institute; and UW-CTRI. AHRQ and UW-CTRI again led a group that published another update in 2008 with the same parties. Sixty-three percent of patients in the U.S. are now asked about their tobacco use, and many are assisted in quitting—highlighting progress that requires additional effort.

In 2012, UW-CTRI published a clinical practice review in the *New England Journal of Medicine* to update these PHS guidelines with the latest evidence-based treatments to help patients quit tobacco use.

## A National Action Plan for Tobacco Cessation

On February 11, 2003, UW-CTRI Director Dr. Michael Fiore presented a bold, new plan to promote smoking cessation, reduce smoking prevalence and prevent millions from starting to smoke to the Interagency Committee on Smoking and Health (ICSH) in Washington, D.C.—chaired by U.S. Surgeon General Richard Carmona. In the summer of 2002, U.S. Health and Human Services Secretary Tommy Thompson asked Dr. Fiore to chair the ICSH Subcommittee on Cessation and charged the 16-member subcommittee with the responsibility of developing a set of science-based action steps that the federal government could undertake to dramatically reduce tobacco use rates in America. The subcommittee met on five occasions in late 2002 and early 2003, including three regional meetings in Washington D.C., Denver and Chicago, where more than 200 individuals provided testimony either in person or in writing.

The subcommittee's report is a comprehensive plan that recommends both government programs and public/private partnerships. The response was overwhelmingly positive—from Surgeon General Carmona to the full committee to the public. After discussion, the full committee unanimously endorsed sending the report to Secretary Thompson in July, 2003. On February 3, 2004, the recommendations of the report were published in the *American Journal of Public Health* and unveiled at a press conference at the National Press Club in Washington, D.C. The same day, Secretary Thompson announced his plan for a national quitline network, one of the plan's recommendations.

# Outreach

In 2001, UW-CTRI began implementing the recommendations of the 2000 Clinical Practice Guideline: *Treating Tobacco Use and Dependence* into practice in Wisconsin through the creation of its statewide Outreach program, funded by the Wisconsin Department of Health Services. The program included two components:

- Regional outreach specialists to train and assist clinicians and health systems to better treat tobacco use.
- A statewide quitline to coach callers on how to quit tobacco use, offering the latest evidence-based tips as a free, state-wide cessation treatment.

More recently, UW-CTRI has worked with health systems to incorporate tobacco cessation into standard care. The Center has also garnered grants to work with special populations that smoke at higher rates. In practice, these outreach efforts allowed for real-world application of guideline recommendations and provided invaluable feedback from the field. The UW-CTRI Outreach program and the Wisconsin Tobacco Quit Line have received national recognition for success in increasing the accessibility of treatment. The Wisconsin Outreach program has literally served as a model for states across the nation. Simply put, UW-CTRI has changed the way health-care systems approach tobacco dependence treatment nationwide.

## The Wisconsin Tobacco Quit Line

Founded in 2001, the Wisconsin Tobacco Quit Line provides free, confidential, non-judgmental coaching and information about how to quit 24/7 at 1-800-QUIT-NOW. Quit coaches help each caller develop an individualized quit plan, including selecting a quit date.

The Quit Line also sends callers a free quit guide with information about quitting methods, a two-week supply of nicotine-replacement medications, and other tips. A secure Web site empowers tobacco users to interact with others trying to quit, get support, develop personalized quit plans and track results. Research shows smokers who use the Quit Line are four times more likely to quit than if they try alone. The Quit Line has helped nearly 200,000 Wisconsin callers since 2001. The program is funded by the Wisconsin Department of Health Services and federal grants, and managed by UW-CTRI. Alere Wellbeing provides the direct services. *Right: Sabrina Diederich quit smoking with the Quit Line's help.*



## The Wisconsin Outreach Model

UW-CTRI has implemented a unique model to help health systems across the state to incorporate tobacco-cessation treatment into standard health care delivery. Outreach specialists across Wisconsin take best practices to leaders at clinics, hospitals, and health-care systems, provide training, and remain in touch as a resource going forward. *Right:*

*UW-CTRI Outreach Specialist Kris Hayden (pictured on the far left in the photo) worked with WHA President Steve Brenton and WHA VP of Quality Assurance Dana Richardson to help all hospitals in Wisconsin go smoke-free and help inpatients to quit tobacco use.*





Since 2001, UW-CTRI outreach specialists have conducted thousands of clinician training sessions and provided assistance to virtually every health plan in the state. Through systems change, individual training, and group education, the UW-CTRI Outreach Program has contributed to:

- Increased access to tobacco dependence treatments.
- Reduced smoking prevalence in the state.
- Improved rates of interventions with smokers, assessed by the Joint Commission and other quality-control organizations.
- Expanded coverage of tobacco-dependence counseling and medications.

## **Fax and EHR Referrals**

As part of the Outreach program, UW-CTRI has partnered with health systems to incorporate tobacco-cessation treatment into electronic referrals to the Wisconsin Tobacco Quit Line via fax or, more recently, electronic health records (EHR). The latter platform is a tremendous tool to:

- Identify smokers visiting primary-care clinics.
- Deliver evidence-based tobacco dependence treatments.
- Link those smokers electronically with the Wisconsin Tobacco Quit Line.

In the early 2000s, UW-CTRI pioneered an innovative program that enabled health systems to refer patients to the Quit Line via fax. The Quit Line would respond to the fax referral by calling the patient at a time convenient for the tobacco user and following up with the patient's doctor with results. Research conducted by UW-CTRI showed this "Fax to Quit" program, supported by UW-CTRI outreach specialists with ongoing provider training and technical assistance, was seven times more effective than simply urging clinicians to refer their patients to the Quit Line.

UW-CTRI received a \$200,000 grant from NCI to work with Dean Clinic to modify this health system's clinical EHR module, algorithm, and workflow to improve clinician performance, increase tobacco-treatment interventions, and augment patient outcomes. Along with UW-CTRI, Dean built and integrated a mechanism to allow clinicians to refer patients to the Wisconsin Tobacco Quit Line directly from the EHR module. This component involved collaborating with the EHR vendor, Epic Systems Corp., and the Wisconsin Tobacco Quit Line vendor, Alere Wellbeing.

## **Eliminating Disparities**

Tobacco is the leading preventable killer of Americans every year—more than the *combined* death toll of combat, suicide, homicide, motor-vehicle accidents, alcohol, drug use, and AIDS. More than 400,000 Americans die every year (20% of all deaths in America), and 44% are patients with a psychiatric diagnosis. Half of all individuals with depression smoke, 80% of alcoholics light up, and nearly 90% of people with schizophrenia or bipolar disorder are addicted to tobacco. In Wisconsin, more than 8,000 smokers die annually (10 each day), including 3,520 with substance dependence and mental-health disorders.

That's why UW-CTRI is a partner in the Wisconsin Nicotine Treatment Integration Project (WiNTiP), supported by the Wisconsin Department of Health Services. WiNTiP is a coalition of treatment experts from the fields of mental-health, substance abuse, and tobacco cessation. WiNTiP works to integrate tobacco treatment into the care for patients with mental-health or substance-abuse issues. WiNTiP has delivered direct training and education to providers in the fields of mental illness and substance abuse, conducted publicity campaigns to encourage treatment of tobacco use, and created

HelpUsQuit.org—which contains a bevy of toolkits, videos, training materials, posters, and other tools providers can use to help their patients quit tobacco use.

UW-CTRI has a number of other programs designed to help people at heightened risk for tobacco-caused disease and death. When the Center and partners surveyed 654 residents in two urban Milwaukee neighborhoods, two out of three reported household incomes below \$15,000, and 40% said they smoked. What's more, beliefs about tobacco addiction in this community showed a stark need for education and cessation interventions, according to a paper by lead researcher Bruce Christiansen. The survey was part of the ZIP Code Project, a three-year community-based research program designed to increase the use of evidenced-based quit-tobacco treatments among individuals living in two non-contiguous, impoverished Milwaukee inner-city ZIP code areas (53208 and 53212). UW-CTRI collaborated with the local Salvation Army and Vincent Family Resource Center to hire surveyors from the community.



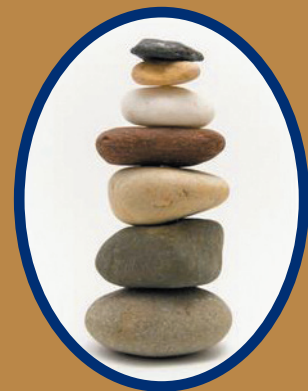
The majority of survey respondents believed that smoking is acceptable and normative, at least under some circumstances. When asked how many people in their community smoke, the average answer was 73% (the overall smoking rate of Wisconsin adults is 19%). Quitting cold turkey, on one's own sans treatment, is successful about 5% of the time. However, 63% of survey respondents said cold turkey was the best way to quit.

“These findings underscore the need to address these issues in very poor communities,” said Christiansen, “if we are to effectively engage them in evidence-based tobacco-dependence treatments and help them meaningfully reduce their risk of smoking-related disease.”

*UW-CTRI partnered with residents of a low-income ZIP Code in Milwaukee (below) to go door-to-door (above) to educate the community about the impact of tobacco use and how to quit using it.*



# Milestones



- 1989** Smoking Cessation and Prevention Clinic opens.
- 1990** First clinical trials to test the nicotine patch conducted at UW-CTRI.
- 1991** *JAMA* publishes “Smoking as a Vital Sign,” written by Dr. Michael Fiore, designed to increase the identification and treatment of smokers in healthcare settings. Today, approximately 63% of patients are screened for tobacco use.
- 1992** Dr. Michael Fiore founds UW-CTRI. Dr. Timothy Baker serves as research director.
- 1996** First Smoking Cessation Clinical Practice Guideline, published by the Agency for Health Care Policy and Research. UW-CTRI chairs the guideline panel.
- 1997** Bupropion clinical trials published by UW-CTRI. Known as “Zyban,” this would be the first non-nicotine medication approved by the FDA for smoking cessation. Addressing Tobacco in Managed Care program starts, funded by the Robert Wood Johnson Foundation and led by UW-CTRI.
- 1999** UW-CTRI receives five-year, \$10 million Transdisciplinary Tobacco Use Research Center (TTURC) grant from the National Institutes of Health.
- 2000** U.S. Public Health Service Clinical Practice Guideline: *Treating Tobacco Use and Dependence* published. UW-CTRI chairs the panel.
- 2001** UW-CTRI launches Wisconsin Outreach Program and the Wisconsin Tobacco Quit Line. The Center publishes groundbreaking research on tobacco withdrawal, showing that it can persist for months (or more).
- 2003** UW-CTRI publishes the National Action Plan for Tobacco Cessation at the request of Health and Human Services Secretary Tommy Thompson.
- 2004** UW-CTRI receives second TTURC grant at \$8.4 million for five years.
- 2005** UW-CTRI plays a key role in passing a workplace smoking ban in Madison that includes bars and restaurants, hosting a news conference featuring doctors and a lung-cancer patient.
- 2007** UW-CTRI assists a coalition of health groups to help pass a bill to raise the tobacco tax. Outreach programs surpass 20,000 healthcare providers served. Dr. Michael Fiore testifies as an expert witness on behalf of the U.S. Department of Justice in the racketeering trial against the tobacco companies.
- 2008** Update of the Clinical Practice Guideline published, led by UW-CTRI. The Wisconsin Tobacco Quit Line offers free nicotine-replacement medications for the first time. Combined with a tobacco tax increase, the Quit Line fields 20,000 calls in January alone.
- 2009** UW-CTRI works with a coalition of health groups to pass a statewide workplace smoking ban that includes bars and restaurants. Gov. Jim Doyle signs the bill into law.
- 2010** Wisconsin Tobacco Quit Line surpasses 150,000 fielded calls.
- 2011** UW-CTRI receives three grants totaling more than \$30 million to help people quit smoking. *New England Journal of Medicine* publishes an article by UW-CTRI on updated best practices for treating tobacco dependence.
- 2012** UW-CTRI publishes research findings that quit-smoking medications can “turn off” high-risk dependence genes.

# UW-CTRI

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University of Wisconsin Carbone Cancer Center  
University of Wisconsin Department of Medicine  
University of Wisconsin School of Medicine and Public Health  
Wisconsin Department of Health Services

To contribute to UW-CTRI to help smokers quit, please visit  
[www.ctri.wisc.edu/donate](http://www.ctri.wisc.edu/donate) or call 608-262-8673.

Finally, UW-CTRI would like to thank all of the patients, study participants, students, and staff members who have contributed to the success of the Center during the last 20 years.

**20**  
**YEARS**  
**1992-2012**