Tobacco Cessation in Cancer Patients

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THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center

Making Cancer History®

Overview

- Smoking prevalence among cancer survivors

- Addressing tobacco use in the oncology setting
  – Tailoring cessation treatments to cancer patients
  – Stigma
  – Cessation intervention trials

- NCI conference on Treating Tobacco Dependence at Cancer Centers
  – Treatment models

- MD Anderson Tobacco Treatment Program

- Research needs

Figure LCS1: Percentage of cancer survivors aged 18 years and older who were current cigarette smokers by sex: 1992-2008
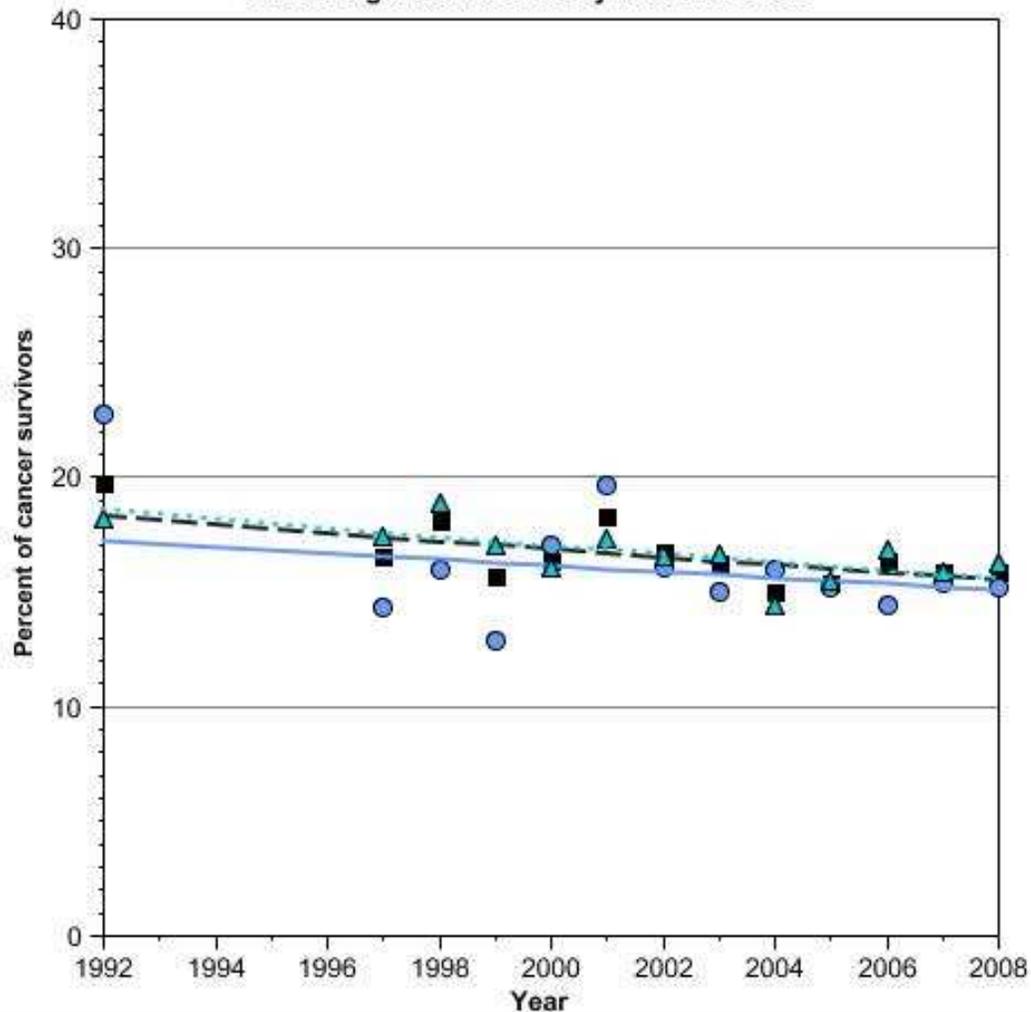
Source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey.
Data are age-adjusted based on the age distribution of cancer patients diagnosed in 2000 in the SEER 17 areas (http://seer.cancer.gov/registries/terms.html) using age groups: 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+.

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# Current Smoking Among Chronic Disease Populations – NHIS, 2006
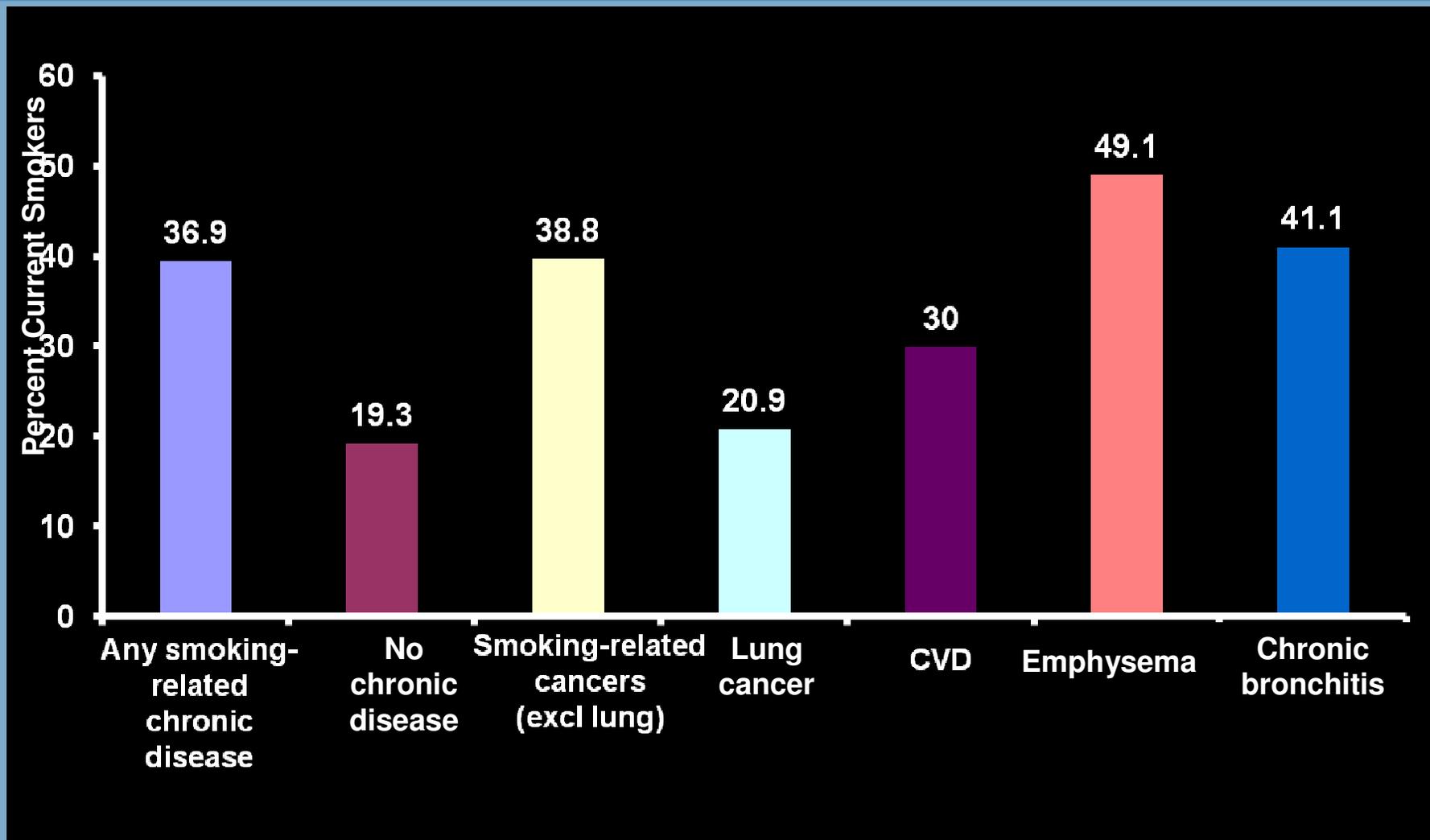
Smoking Status at MD Anderson Cancer Center

Smoking Status – Definitions
Patient History Database (PHDB), MD Anderson Cancer Center, 2000-2007

- Self-reported clinical intake assessment questionnaire completed by all newly registered patients.

- Approximately 93% of all newly registered patients completed the questionnaire.

- Smoking status is categorized as follows: current, recent quitter (quit less than 1 year prior to presentation to MDA), former (quit longer than 1 year prior to presentation to MDA) and never smokers.

Smoking Status of Cancer Patients
2000-2010
MD Anderson Cancer Center
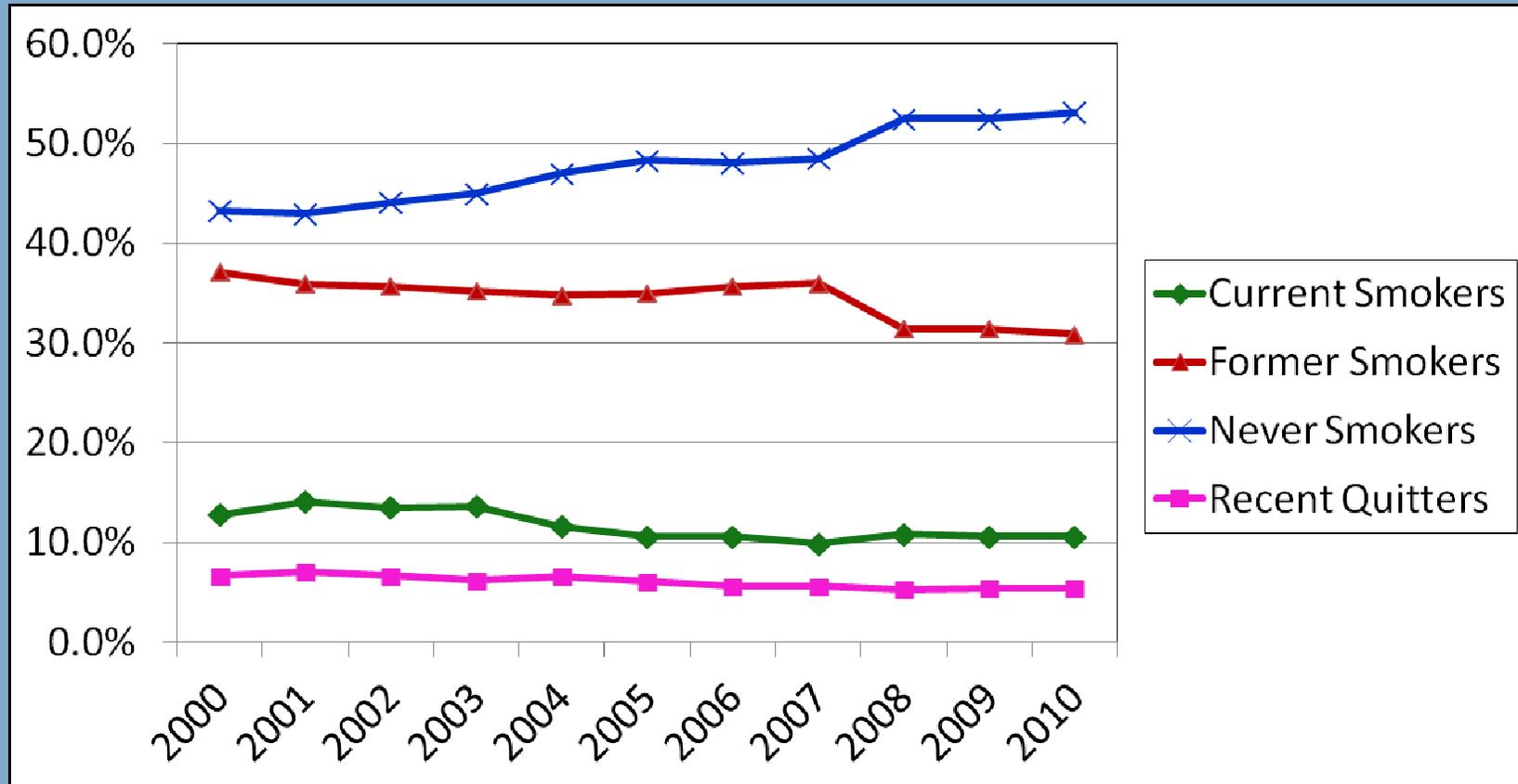
Patient History Database, unpublished data   **Note: ~ 45% of MDACC patients ³ 60 yrs**

Smoking Status by Select Adult Cancers
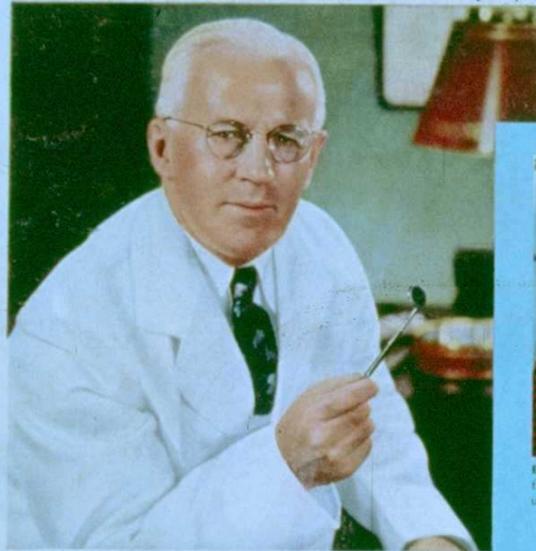# PHDB, MD Anderson Cancer Center
2000-2007

Smoking Status				
Cancer Site	**Current**	**Recent Quitter**	**Former**	**Never**
Lung	18.4%	19.8%	46.4%	15.4%
H&N	17.3%	9.8%	36.7%	36.2%
Esophagus	15.3%	8.5%	49.4%	26.8%
Bladder	16.1%	6.7%	50.9%	26.4%
Cervix	20.6%	5.7%	21.2%	52.5%
Breast	9.0%	3.3%	25.3%	62.4%
Prostate	9.2%	2.1%	46.2%	42.6%
Colorectal	9.4%	4.1%	35.2%	51.3%
Melanoma	11.5%	3.3%	31.9%	53.3%
Leukemia	8.0%	4.7%	36.2%	51.2%
Lymphoma	9.9%	4.3%	31.6%	54.2%

Accuracy of Self-Reported Tobacco Assessments in a Head and Neck Cancer Treatment Population

- **N=50 head and neck cancer patients.**

- **Prospective analysis – self-reported and biochemically confirmed (serum cotinine) tobacco use during treatment (baseline and weekly → week 7): 93% compliance.**

- **29.4% patients misrepresented smoking status according to cotinine levels**

- **Accuracy increased by 14% with weekly vs. baseline self-report.**

Warren et al, Radiotherapy and Oncology, 2011

Smoking and Tobacco Use are Important to Address in the Oncology Setting

- Rates of current smoking at diagnosis among patients with lung or H&N tumors are 40-60%.

- Initial high quit rates following surgery decline over time: 36.9% of patients were smoking 1 year after surgery for non-small cell lung cancer (NSCLC).

- Patients with cancers less strongly associated with smoking have lower long-term quit rates.

- Overall, up to 30-50% of patients smoking at diagnosis do not quit, or relapse following initial quit attempts.

- Relapse even occurs among patients who quit $\geq$ 1 year earlier

Walker et al, CEBP, 2006; Cooley et al, Lung Cancer, 2009;
Gritz et al, Principles and Practice of Oncology, 9th edition, Ed(s) DeVita et al, 2011

Tailoring Smoking Cessation Interventions to Patients with Cancer

- Education about the link between cancer and smoking.

- Sensitivity to physical limitations imposed by disease and treatment (especially pertaining to diet and exercise).

- Medical contraindications to certain types of pharmacologic treatment must be recognized and appropriately managed.

- Psychological issues such as guilt, depression, anxiety, and stress should be considered and addressed.

- Recognition of delayed relapse.

Gritz et al, Cancer, 2006

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Stigma, Shame, and Blame Experienced by Patients with Lung Cancer

- **Total of 45 patients with lung cancer, UK, qualitative study (narrative interviews).**

- **Lung cancer stigma stronger than other cancers because of association with smoking.**

- **Interaction with family, friends, and doctors was often affected.**

- **Patients who had stopped smoking years ago or had never smoked felt unjustly blamed for their illness.**

- **Media stigma: Portrayal of death in anti-tobacco ads exacerbated fear and anxiety.**

Chapple et al, BMJ, 2004

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Assessment of Guilt and Shame in Patients with Non-Small-Cell Lung Cancer Compared with Patients with Breast and Prostate cancer.

- 172 patients with stage IV NSCLC, breast cancer, or prostate cancer.

- Mailed surveys included tests of generalized guilt, shame, depression, and anxiety as well as guilt, shame, and embarrassment related to one's cancer.

- A composite score of embarrassment related to one's cancer (perceived cancer-related stigma) was higher in patients with NSCLC ($P < .01$) than breast and prostate cancer.

- A history of smoking correlated with increased levels of guilt and shame, regardless of tumor type.

- Of the patients with NSCLC, 29.5% felt that their behaviors contributed to their cancer compared with 10.5% of the comparison patients.

- Need for patient-provider communication regarding issues of cancer causation, guilt, shame, depression and anxiety.

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Differences in Primary Care Clinicians' Approach to Non-Small-Cell Lung Cancer Patients Compared with Breast Cancer.

- 1132 primary care physicians in Wisconsin, mail survey: response rate 59.4%, N=672.

- Physicians were randomized to receive one of four scenarios on the basis of cancer type and smoking status.

- Physicians' referral patterns, length of follow-up, and knowledge about the benefits of chemotherapy were compared.

- Clinical scenarios: physicians were less likely to refer patients with advanced lung cancer than patients with advanced breast cancer ($p < 0.001$).

- More physicians knew that chemotherapy improved survival in advanced breast cancer than in advanced lung cancer ($p = 0.0145$).

- Breast cancer patients were more likely to be referred for further therapy, whereas lung cancer patients were often referred only for symptom control ($p = 0.0092$).

- No statistically significant differences between smoking and nonsmoking patients.

Smoking Cessation Interventions in Cancer Patient Populations

- Few studies (~12), mostly small sample sizes and no biochemical validation.

- Highest quit rates in lung, H&N populations (70% at 1 year, Gritz et al, 1993, validated).

- Interventions closer to cancer diagnosis more successful.

- Large RCT (n=246) of bupropion vs placebo (plus NRT & counseling) showed no main effect of tx (mixed pt sample), but depressed pts benefitted from bupropion (Schnoll et al, 2010).

- Targeting smoking, depression and alcohol use in H&N ca pts resulted in higher 6 mo quit rates in intervention group (cog/beh tx + meds) vs usual care (Duffy et al, 2006).

Smoking Cessation Interventions in Cancer Patient Populations

- **Peer-based telephone counseling intervention in adult survivors of pediatric ca vs self-help (n=796) – sig intervention effect, long term (12 mos) (Emmons et al, 2005).**

- **Barriers to trial enrollment – low eligibility (current smoking status), distance from tx, multiple languages, medical contraindications, comorbidities (depression, alcohol), guilt/fear of stigma, fatalism, quit/relapse patterns, etc.**

National Cancer Institute Conference on Treating Tobacco Dependence at Cancer Centers

By Glen Morgan, PhD, Robert A. Schnoll, PhD, Catherine M. Alfano, PhD, Sarah E. Evans, PhD, Adam Goldstein, MD, MPH, Jamie Ostroff, PhD, Elyse Richelle Park, PhD, Linda Sarna, DNSc, RN, and Lisa Sanderson Cox, PhD

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National Cancer Institute Conference on Treating Tobacco Dependence at Cancer Centers
December 2009

- **Highlighted the importance of treating tobacco dependence in the context of cancer care and survivorship.**

- **Reviewed guidelines for treating tobacco dependence in cancer patients and cancer survivors.**

- **Discussed models for tobacco dependence treatment in the oncologic context.**

- **Discussed barriers to the implementation of tobacco dependence treatment in cancer centers.**

- **Reviewed strategies to overcome barriers.**

- **Explore scientific questions related to tobacco dependence treatment that require further study.**

Morgan et al, 2011

National Cancer Institute Conference on Treating Tobacco Dependence at Cancer Centers December 2009

- Survey of 58 NCI cancer centers – 60% offer some form of tobacco use treatment (often limited to disease sub-populations); <50% have designated personnel; availability of tobacco use treatment programs lags behind other models of care (e.g., nutrition). Resource needs – motivation and commitment of oncology leadership, funding, personnel.

- Priorities to enhance quality of care for tobacco dependence:
  - Develop consensus regarding assessment of smoking status
  - Refine EMRs and clinical trials to ensure identification and referral of smokers
  - Evaluate novel treatment of cancer patients
  - Evaluate methods to overcome barriers to providing treatment

Morgan et al, 2011; Goldstein et al, 2012

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Treatment Models at Cancer Centers

Program Characteristics	Massachusetts General Hospital	Memorial Sloan-Kettering Cancer Center	MD Anderson Cancer Center	Moffitt
Identification of tobacco users	Electronic assessment/ referral	Inpatient/ ambulatory RN assessment	Referral-provider, self, electronic follow-up	Comprehensive admission (EMR)
Eligibility	Current smokers, recent quitters (past 12 mo)	Current smokers, recent quitters (past 30 d)	Current smokers, recent quitters (past 12 mo)	Current smokers, recent quitters (past 90 d)
Treatment Intensity	Level 4*	Level 4	Level 4	Level 3**
Treatment modality	Individual counseling, referral to quitline, self-help	Individual, telephone	Individual, telephone, web-cam	Identification of tobacco users
Funding source(s)	Hospital budget/clinical revenue	Hospital budget/clinical revenue	State tobacco settlement funds	Hospital budget

*Level 4: any hospital contact and postdischarge support lasting more than 1 month
**Level 3: any hospital contact and postdischarge support lasting 1 month or less

Morgan et al, 2011
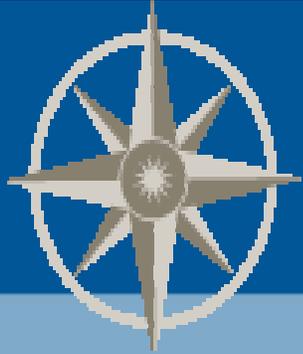
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Tobacco Treatment Program

The mission of the Tobacco Treatment Program is to implement a comprehensive tobacco-cessation and relapse prevention program for all M. D. Anderson Cancer Center patients and employees.

Paul Cinciripini, Ph.D.
Director

Janice Blalock, Ph.D.
Assistant Director

Maher Karam-Hage, M.D.
Associate Medical Director

TTP Referral Sources – FY11*

Source	Referrals	Patients	Yield**
Self	**193**	**131**	**68%**
Health Care Provider	**708**	**288**	**41%**
Nursing Staff	**1489**	**208**	**14%**
EMR pilot*	**404**	**56**	**14%**

* Patients can be referred by more that one source.
  Patient counts are unique within source, but not across sources.

** Yield is percent of referrals who become patients

*** 3 centers – Head & Neck, Lymphoma, Cancer Prevention

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Clinical Service

- Program offers:
    - In-person and/or telephone behavioral counseling
    - Prescription medications & nicotine replacement
    - Deliver services by telephone and in inpatient rooms as needed
    - Multidisciplinary team (psychologists, psychiatrist, social workers, PA, nurse)
    - Assessment and treatment of comorbid psychiatric disorders, depressive/anxiety symptoms, substance use and abuse
    - Assess and treat patient's family members
    - No cost to patients and employees

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Assessment and Treatment Plan

- **Initial assessment with clinical interview and battery of standardized questionnaires**
  - **Tobacco history**
  - **Level of nicotine dependence**
  - **Level of motivation to change tobacco use behavior**
  - **Psychological aspects of the cancer experience**
  - **Comorbid psychiatric disorders, depressive/anxiety symptoms, substance use and abuse**
  - **Expired CO, plasma cotinine and buccal swab (genetics)**
  - **Medication, health and surgical history**
  - **Concurrent Illness**
  - **Pending treatments at M.D.A. (surgeries, transplants, etc.)**

- **Medical record documentation & provider communication**

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Counseling and Pharmacological Intervention

- **Behavioral treatment based on cognitive behavioral strategies**

  - **6 to 8 counseling sessions; 45-90 minutes**

  - **Intensity of counseling dependent on:**

    - **Level of nicotine dependence**

    - **Upcoming surgery/cancer treatments**

    - **Presence of comorbid psychiatric disorders**

    - **Spousal involvement**

  - **As needed telephone follow-up**

  - **Long term follow-up: 3, 6 and 12 months**

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Counseling and Pharmacological Intervention

- **Pharmacological Intervention**

    - **Varenicline (Chantix)**

    - **Bupropion (Wellbutrin, Zyban)**

    - **NRT (nicotine replacement therapy)**

    - **Various medication combinations**

- **Ongoing assessment of abstinence**

    and related clinical issues

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Demographic and Behavioral Information (N = 1577) 2006-2011

	N	%
Female	790	50.1
Race/Ethnicity		
Black	161	10.3
Hispanic	75	4.8
Other	20	1.3
White	1302	83.6
Psychiatric Comorbidity		
Yes	559	41.1
No	802	58.9

	Mean	SD
Age	53	10.2
FTND	4.8	2.2
Cigarettes/ Day	19	11.9
Years Smoked	34.9	12.2

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Psychiatric Co-Morbidities
(N=1361)
2006-2011

41% present with at least one comorbid diagnosis and, of those, approximately 40% have ≥ 2 disorders

| Category	Value
Alcohol Abuse	10%
Major Depression	18%
Other Depression	13%
Anxiety	16%
Panic	8%
No Disorder	59%

Legend:
- No Disorder
- Panic
- Anxiety
- Other Depression
- Major Depression
- Alcohol Abuse
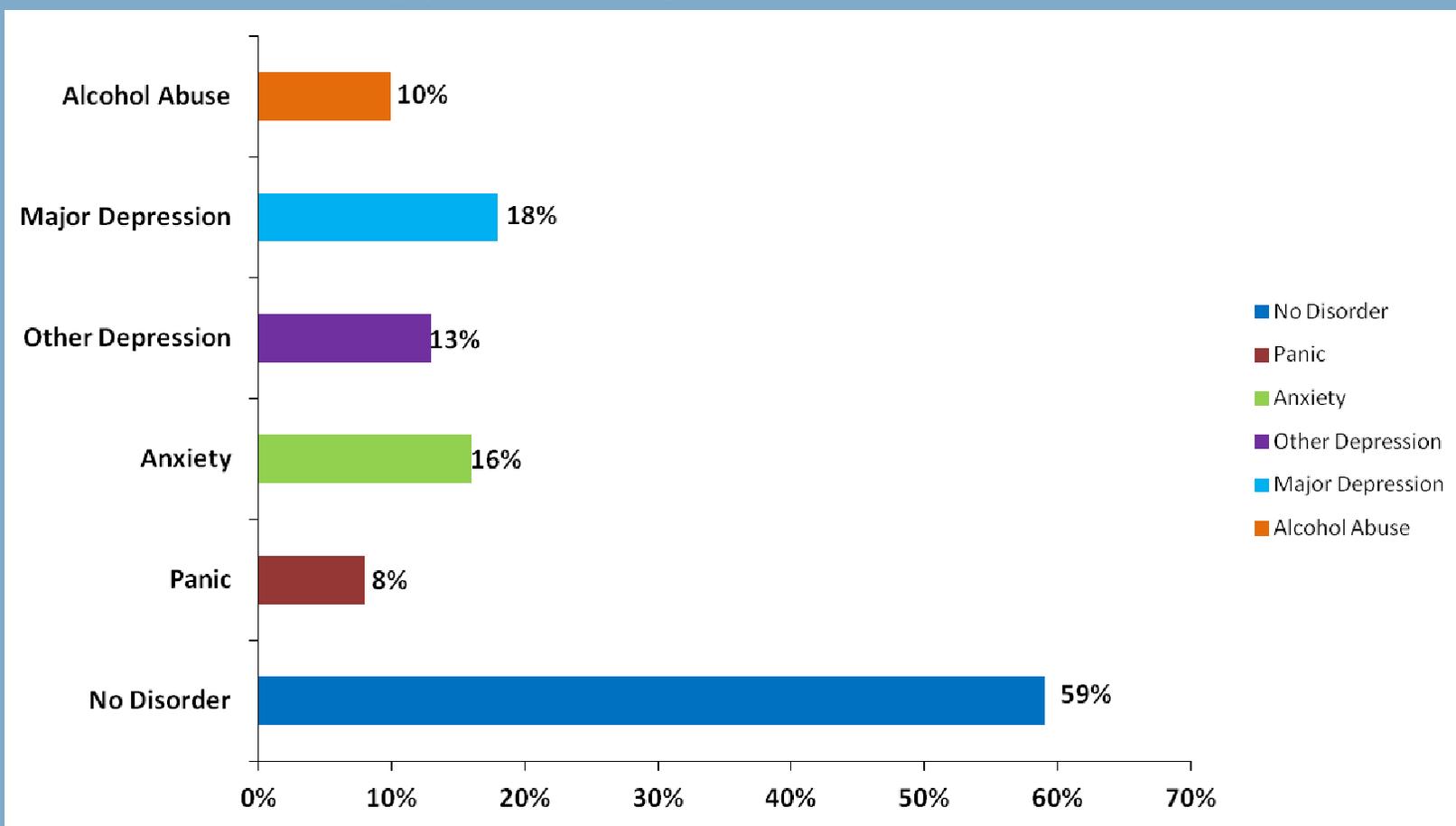
TTP Patients Smoking-Related Cancers 2006-2011

Cancer Site	Frequency	Percent
Lung	241	31.1
Head & Neck	258	33.3
Colorectal	48	6.2
Bladder	45	5.8
Leukemia (acute myeloid)	13	1.7
Cervical	19	2.5
Kidney	39	5.0
Pancreas	18	2.3
Esophagus	29	3.7
Stomach	17	2.2
Vulva	12	1.6
Other*	35	4.5
Total	774	100.00

1-ACS and literature based evidence for smoking as a risk factor
*Other = cancer sites with frequency < 1%

Cessation Rates over Time: Smoking-Related Cancers (N=774) vs. Non-Smoking Related (N=685) 2006-2011
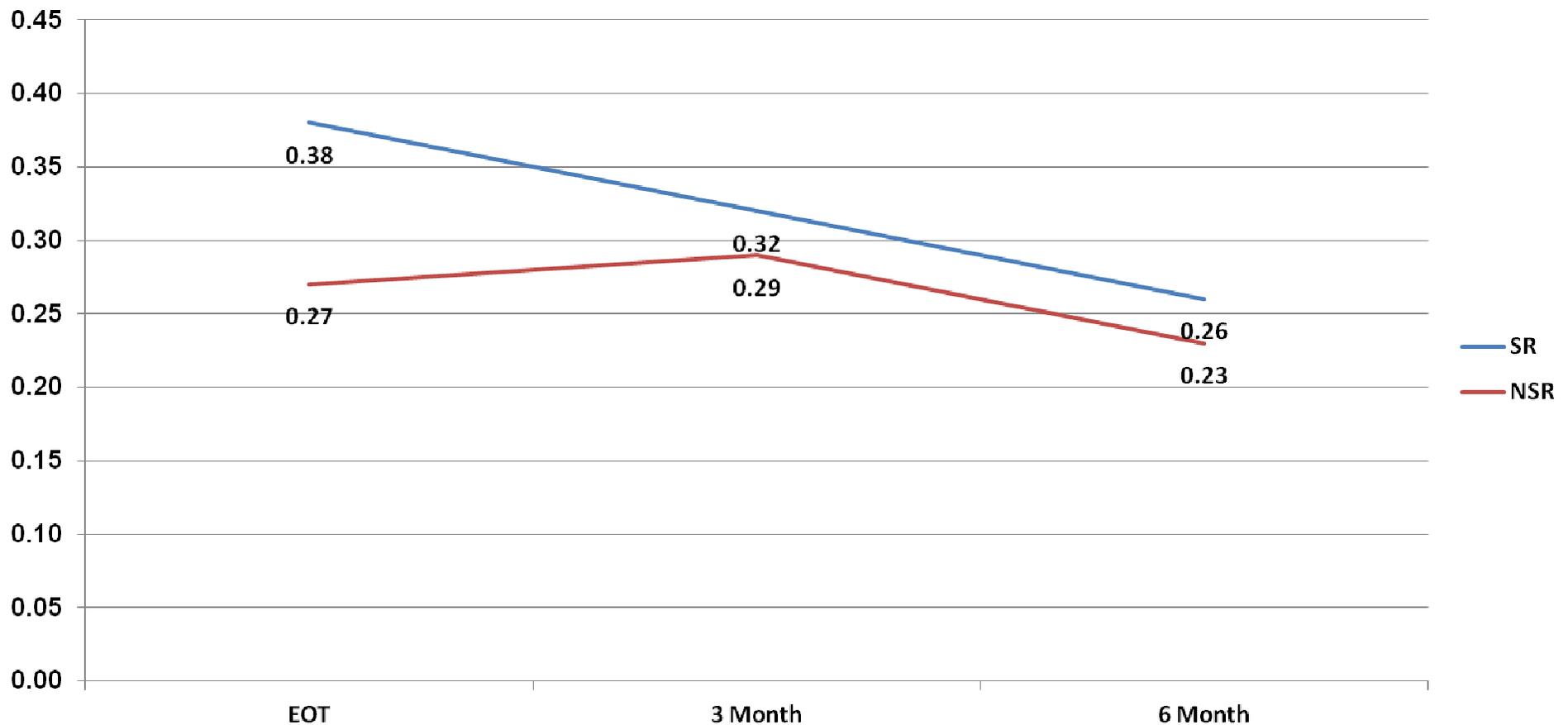
Non-smoking-related vs smoking-related at EOT
Odds ratio: 0.694
95% CL: 0.534 – 0.901

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Research Needs:
Systemically Collect Smoking Status as Core Data in All Oncology Clinical Trials

- **At diagnosis, trial registration and every trial visit – during treatment and throughout follow-up to long-term survival or death.**

- **Detailed history and status using standardized instruments from cessation research and national surveys (NHIS, BRFSS).**

- **Measurement of cotinine for assessment of exposure, and objective validation of abstinence.**

- **Build a large clinical trials database with the power to assess treatment complications, toxicities, outcome, recurrence, SPTs, and survival for multiple cancer sites and across treatment modalities.**

- **Conduct prospective RCTs to establish optimal cessation treatment regimens and timing of treatment.**

Ellen's Orchids