Lung Cancer Screening/ Tobacco Control Best of WCLC 2021 San Francisco

David Tom Cooke, MD, FACS
Chief, Division of General Thoracic Surgery
Task-Force Chair,
Comprehensive Lung Cancer Screening Program
UC Davis Health

OA3

Tobacco Recovery

OA3

OA3

Implementation of an opt-out smoking cessation service for oncology patients

K. Michael Cummings, PhD, MPH
Hollings Cancer Center
Medical University of South Carolina
Charleston, South Carolina, USA

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OA3 Discussant

OA3 - Novel Approaches to Cessation in Cancer Care
How Can We Best Deliver Tobacco
Cessation Services in Cancer Care?

Lawson Eng MD, SM, FRCPC
Division of Medical Oncology and Hematology, Princess Margaret Cancer Centre
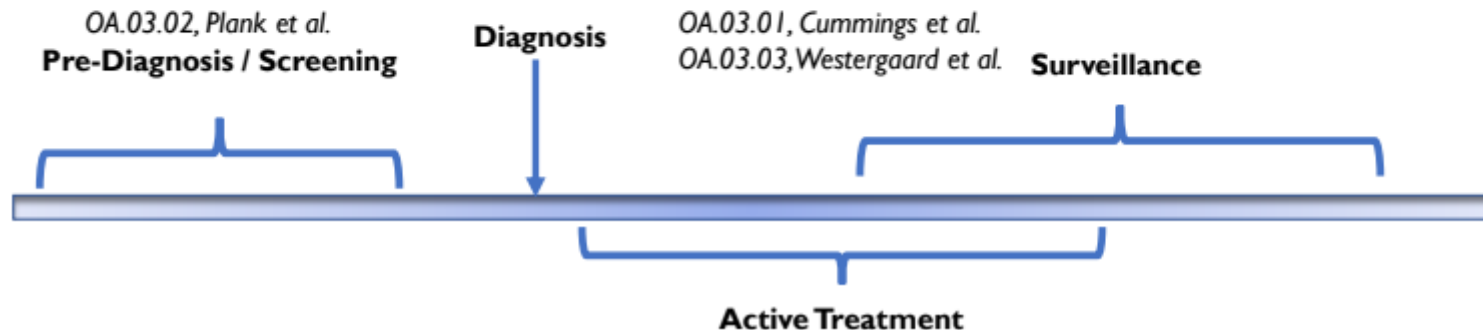Lawson.eng@utoronto.ca

Medicine
UNIVERSITY OF TORONTO

UHN Princess Margaret Cancer Centre

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Introduction

- Continued smoking after a diagnosis of cancer worsens outcomes

- Quitting smoking after a diagnosis of cancer helps improve cancer and non-cancer survival, improves treatment response, reduce toxicities and also reduces costs

- Despite this evidence, how can we improve delivery of cessation services?

OA.03.02, Plank et al.
Pre-Diagnosis / Screening

Diagnosis

OA.03.01, Cummings et al.
OA.03.03, Westergaard et al.
Surveillance

Active Treatment

OA.03.03 - Patient Factors Associated With Engagement of an Academic Institution Tobacco Cessation Referral Program. Westergaard et al.

Research Question:
- What factors are associated with engaging with a tobacco cessation program at a NCI cancer centre?

Methods:
- Tobacco cessation program: Remote services with tobacco cessation specialist including counselling, pharmacotherapy, and quit-line and SMS texting services
- Referrals sent via EMR initiated by care team
- Evaluated factors associated with accepting a referral

OA.03.03 - Patient Factors Associated With Engagement of an Academic Institution Tobacco Cessation Referral Program. Westergaard et al.

Results:

- 50% (82/169) of patients referred from July 2019 until February 2021 agreed to participate in the program

- Most used quit line services (81%) or pharmacotherapy (87%) in the program

- 15% of patients in the program quit smoking; majority (60%) used pharmacotherapy

- Caucasians and those who were not married were less likely to engage in cessation services

Take Home

- Half of patients agreed to take part, some groups are less likely to engage

OA.03.01 - Implementation of an Opt-Out Smoking Cessation Service for Oncology Patients. Cummings et al.

Research Question:
- What are the outcomes of implementing an "opt-out" smoking cessation program at a cancer centre?

Methods:
- Hollings Cancer Centre Stop Smoking Service: Screen all patients for tobacco use, refer all patients using tobacco every 6 months
- Telehealth, clinic visits and pharmacotherapy
- 6 month follow-up phone call in random sample

- Program Evaluation from: January 1 2020 to March 31, 2021

OA.03.01 - Implementation of an Opt-Out Smoking Cessation Service for Oncology Patients. Cummings et al.

Results:

- 1228 new smokers not identified within the preceding 6 months during 15 month period
- Outreach rate: 795 / 1228 patients (65%)
- 510 (73%) patients enrolled in the service, 190 (27%) opted out and 95 quit already
- 6 month follow-up: most attempted quitting, 20-30% quit and 43% used a medication; non-smoking prevalence rate 20% higher in those in the program
- Those enrolling more likely to attempt quitting (aOR 1.2) and use medications (aOR 1.2)

Take Home: Opt-out program had high acceptance rate and patients were more likely to attempt quitting and ultimately quit smoking

OA.03.02 - Tobacco Cessation Among Patients Undergoing Lung Cancer Screening: Success with Repetition. Plank et al.

Background:
- Repetitive counselling may improve tobacco cessation rates
- Lung Cancer Screening provides both a "teachable moment" for cessation discussion and follow-up at regular CT intervals

Research Question:
- What is the impact of repetitive counselling on cessation and cut-back rates in patients undergoing screening?

Methods:
- Lung cancer screening patients who were current smokers undergoing screening for at least 3 years where repetitive counselling was offered at each visit (2013-2018)
- Evaluated cessation rates, cut-back rates and positive change rates (cut back + quitting)

OA.03.02 - Tobacco Cessation Among Patients Undergoing Lung Cancer Screening: Success with Repetition. Plank et al.

Results:

- Among 254 patients, 90% expressed interested in quit / cut down at first visit
- 2 year follow-up: ~30% had quit and 10% had cutback (39% overall positive change rate)
- Follow-up to 2020: 90% of those who quit remained abstinent, and 50% of those who initially cut back ultimately quit

Take Home:

- Higher quit rates vs previous historical quit rates (31% vs 10-20%), results seen were sustained

Comparing OA 03.02 with OA 03.01 and OA 03.03

- Counselling at regular intervals lead to improved quit rates over time
  - Dose-effect seen in other studies with frequency of contact and quit rates[1]
  - Treating tobacco use like a chronic disease
  - Smoking relapse prevention, prolonging tobacco cessation treatment time, help with coping, additional support[2]
  - Comparison with historical quit rates? (2010's vs 2000's)
- Can these results translate to cancer patients undergoing treatment?
  - Lung cancer screening patients may be a more motivated population
  - Less competing factors compared to cancer patients undergoing treatment

1. Journal of Consulting and Clinical Psychology, 64(1), 202–211.
2. Nicotine Tob Res. 2007;9(8):853–63.

Take Home Messages

- Active engagement with tobacco cessation programs remain challenging (50%) and we need strategies to improve uptake in specific patient groups (Westergaard et al)
- An opt-out tobacco cessation program is feasible and has a good acceptance rate, and was associated with more quit attempts and use of medications (Cummings et al)
- Higher intensity counselling can lead to greater quit rates in patients undergoing lung cancer screening (Plank et al)

Lung Cancer Screening

Erika Hlavacek @ErikaHlavacek · Sep 9
Impact of #COVID19 on #lungcancer #patient care - ⬇ in screening, diagnosis rates & Pt. encounters with healthcare system. @IASLC @GO2Foundation #WCLC21 #LCSM
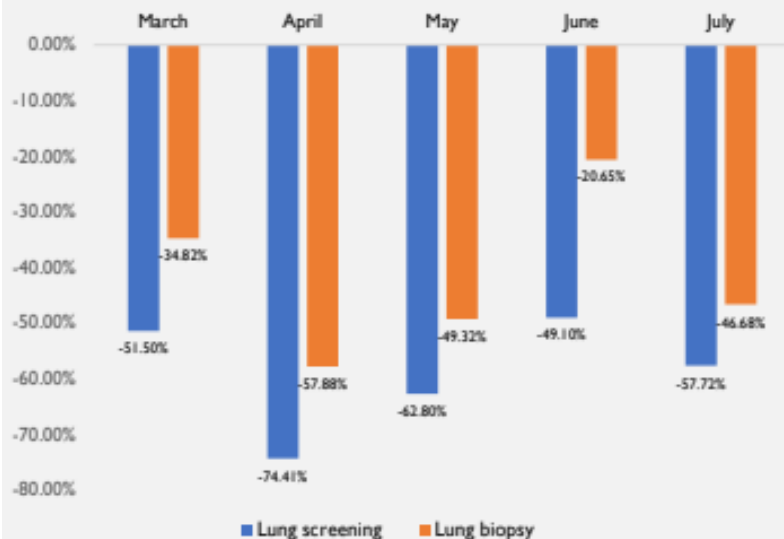
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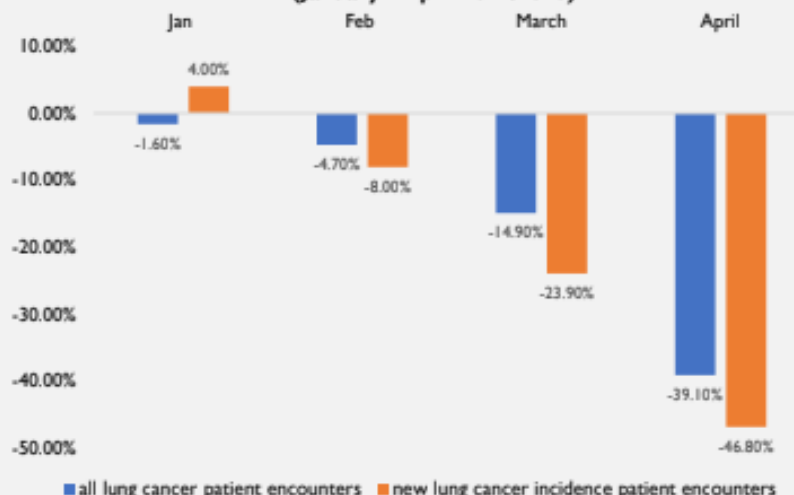SEPTEMBER 8-14, 2021 | WORLDWIDE VIRTUAL EVENT

The COVID-19 pandemic has caused significant decreases in lung cancer screening, diagnosis rates and patient encounters with the health systems.

2020 changes in lung screening and biopsy relative to 2019 (March – July 2019/2020)

	March	April	May	June	July
Lung screening	-51.50%	-74.41%	-62.80%	-49.10%	-57.72%
Lung biopsy	-34.82%	-57.88%	-49.32%	-20.65%	-46.68%

■ Lung screening ■ Lung biopsy

Relative percent change in billing frequencies for lung cancer screening procedures and lung cancer biopsies in American seniors (March-July 2019/2020). Patt et al. (pubs.org/doi/full/10.1200/CCI.20.00134)

2020 change in lung cancer patient encounters relative to 2019 (January – April 2019/2020)

	Jan	Feb	March	April
all lung cancer patient encounters	-1.60%	-4.70%	-14.90%	-39.10%
new lung cancer incidence patient encounters	4.00%	-8.00%	-23.90%	-46.80%

■ all lung cancer patient encounters ■ new lung cancer incidence patient encounters

Percent change in monthly patient counts of lung cancer from (Jan – April 2019/2020). London et al. (pubmed.ncbi.nlm.nih.gov/32716647/)

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Conclusion

➢ A majority (60%) of GO2 Foundation COE programs noted decrease in lung cancer diagnosis rates during the COVID-19 pandemic.

➢ Average of 36% decrease in use of patient support services by patients and HCPs in 2020 compared to 2019.

➢ The decrease in patient interaction directly with GO2 Foundation COE network and support services during the pandemic shows a possible effect of the COVID-19 pandemic on the lung cancer community.

Providers and organizations serving patient needs to be prepared to meet the increased needs of this community as the country opens back up and people seek care and treatment once again.

Rashmi Acharya
MSc

Association of Healthcare System Resources With Lung Cancer Screening Utilization

Jennifer A. Lewis[1,2,3], Lauren R. Samuels[1,2], Jason Denton[1,2], Michael E. Matheny[1,2], Amelia Maiga[1], Chris G. Slatore[4], Eric Grogan[1,2], Jane Kim[5], Robert Sherrier[5], Robert S. Dittus[1,2], Pierre P. Massion[1,2,3], Laura Keohane[2], Christianne L. Roumie[1,2], Sayeh Nikpay[6]

[1]VHA Tennessee Valley Healthcare System, Nashville TN
[2]Vanderbilt University Medical Center, Nashville TN
[3]Vanderbilt Ingram Cancer Center, Nashville TN
[4]VHA Portland Health Care System, Portland OR
[5]VHA Durham, Durham NC
[6]University of Minnesota School of Public Health, Minneapolis MN

United States of America

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Background

- Veterans Health Administration (VHA) is largest integrated U.S. healthcare system
  - 9 million Veterans at 171 medical centers
- 2013-2015 lung cancer screening demonstration project (DP) at certain select VA medical centers
  - Resources provided: personnel, clinical & educational tools, support system

Goal: To test if policy that provided system-level resources increased lung cancer screening rates at DP VAMCs relative to comparable VAMCs during and after the DP

Evaluating Lung Cancer Screening Rates

Data Source
- VHA's administrative database for screenings performed (CPT codes G0297 & 71250) 2011-2018 (numerator)
- Count data by age, year, VAMC for eligible Veterans and proportion meeting 2013 USPSTF smoking criteria (denominator)

Primary outcome
- Facility-level rates of Veterans screened per 1,000 eligible

Intervention Group
- 8 VAMCs received DP resources

Comparison Group
- 20 similar VAMCs that applied but were not accepted

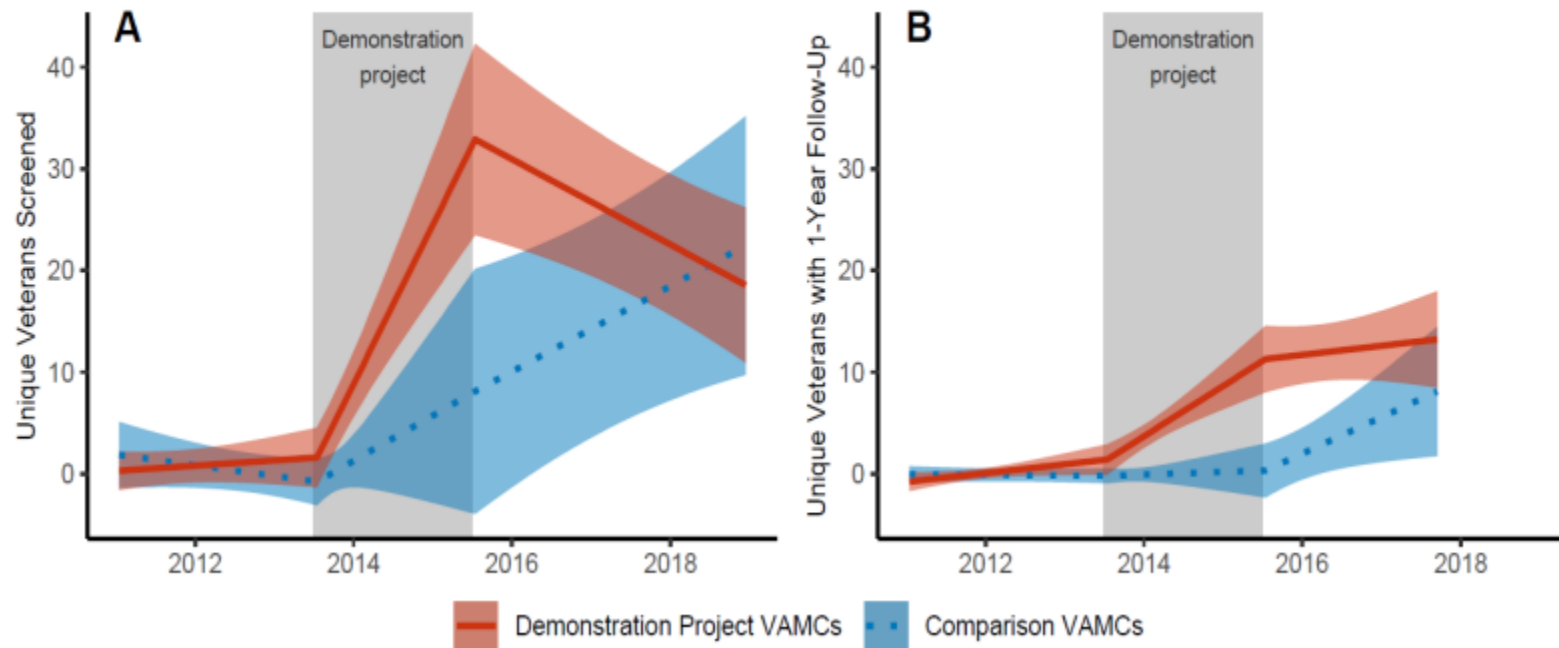**Interrupted times series → Time divided into three periods**
- Pre-DP: Jan 2011-June 2013
- DP: July 2013-June 2015
- Post-DP: July 2015-May 2018

Interrupted Times Series

Conclusion

- VHA policy that provided healthcare system-level resources was associated with increased screening and follow-up screenings

Clinical Impact:

- Policies that provide healthcare system-level resources would likely increase lung cancer screening reach and sustainment

Email: jennifer.a.lewis@vumc.org
Twitter: @JenLewisMD

DISPARITIES RELATED TO USPSTF ELIGIBILITY FOR LOW-DOSE COMPUTED TOMOGRAPHY (LDCT) SCREENING

Samuel A. Kareff, MD, MPH[12], Randi M. Williams, PhD, MPH[2]; Paul Sackstein, MD[2]; Tina Roy, MD[2]; George Luta, PhD[2]; Chul Kim, MD, MPH[2]; Kathryn Taylor, PhD[2]; Martin C. Tammemägi, DVM, MSc, PhD[3]

[1]**University of Miami Sylvester Comprehensive Cancer Center/Jackson Memorial Hospital, Miami, Florida, United States**
[2]Lombardi Comprehensive Cancer Center, Georgetown University Hospital, Washington, DC, United States
[3]Brock University, St. Catharines, Ontario, Canada
s.kareff@miami.edu

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STUDY PURPOSE

The goal of this analysis was to compare the proportions of lung cancer cases who would have been eligible for LDCT screening according to 2013 USPSTF guidelines versus the PLCOm2012 model, overall and stratified by race and sex.

METHODS AND POPULATION

- We analyzed lung cancer cases diagnosed at Georgetown University Hospital from January 1, 2014 to December 31, 2018.

- We compared the 2013 USPSTF criteria (55-80 years, 30 pack-years, current smoker, or quit within 15 years) vs. the PLCOm2012 (age, race, education, BMI, COPD, emphysema or chronic bronchitis, personal history of cancer, smoking status, cigarettes per day, duration smoked, and years ago quit smoking) model using a 6-year risk threshold of 1.7%.

PCLOm2012 HAS HIGHER SENSITIVITY COMPARED TO USPSTF 2013 STRATIFIED BY RACE AND SEX
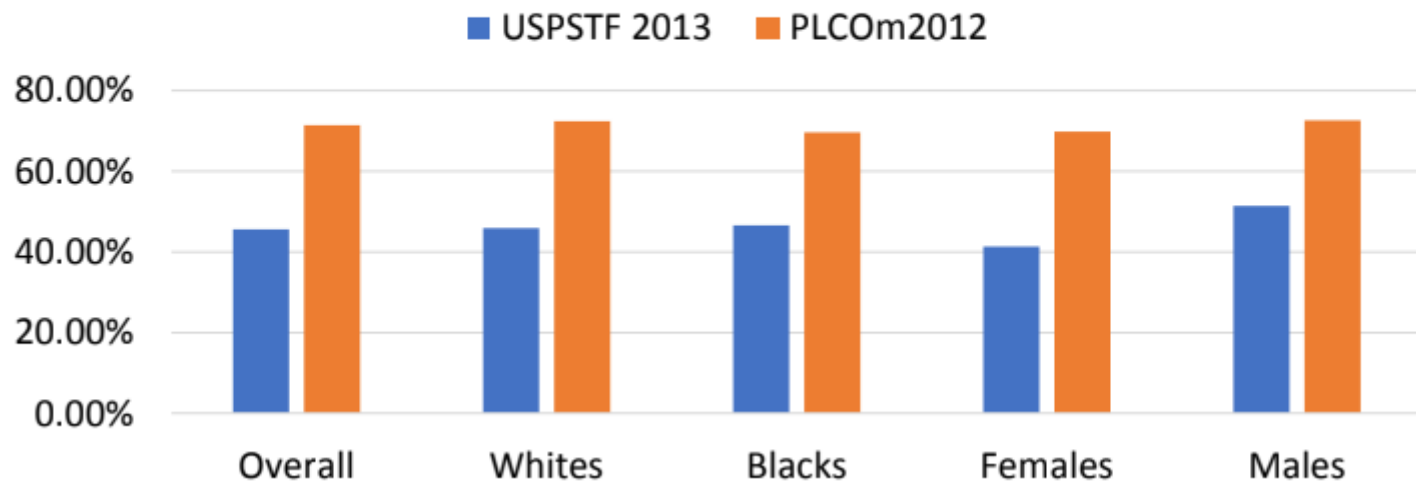
USPSTF 2013 SELECTS LESS WOMEN THAN MEN FOR SCREENING

	USPSTF2013	PLCOm2012 ≥1.7% risk
Overall	45.6% (41.0% - 50.4%) (A)	71.4% (66.9% - 75.5%) (B)
Race		
White	45.9% (39.9% - 51.9%) (C)	72.4% (66.8% - 77.6%) (D)
Black	46.6% (38.7% - 54.6%) (E)	69.6% (61.8% - 76.6%) (F)
Sex		
Female	**41.3% (34.9% - 47.9%) (G)**	69.8% (63.5% - 75.6%) (H)
Male	**51.4% (44.5% - 58.3%) (I)**	72.6% (66.1% - 78.5%) (J)
Race by Sex		
White women	40.8% (32.7-49.4%)	71.1% (62.9-78.4%)
Black women	41.6% (31.2-52.5%)	68.5% (57.8-78.0%)
White men	51.1% (42.4-59.7%)	73.7% (65.5-80.9%)
Black men	52.8% (40.7-64.7%)	70.8% (58.9-81.0%)

(C) vs. (E), *p*=0.886
(D) vs. (F), *p*=0.526
(G) vs. (I), p=0.032
(H) vs. (J), *p*=0.506
(**Bold** indicate statistical significance).

TAKE-HOME MESSAGES

- Our study demonstrated that the PLCOm2012 model selected a significantly larger percentage of lung cancer cases compared to the 2013 USPSTF guidelines.
  - The 2013 USPSTF criteria may contribute to gender disparities in the early detection of lung cancer.

- While the new 2021 USPSTF guidelines may improve sensitivity, models like the PLCOm2012 are more inclusive of high-risk groups and may serve as a tool to ameliorate disparities.

Presidential Symposium

Global Lung Cancer Deaths Attributable to Air Pollution

Oncologists United for Climate and Health

Christine D. Berg, M.D.
Former Co-Director National Lung Screening Trial
drchrisberg@outlook.com

Joan H. Schiller, M.D.
Adjunct Professor, University of Virginia
Former Deputy Director of Inova Schar Cancer Institute and
UT Southwestern Simmons Cancer Institute
Joanhschiller@gmail.com

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Air Pollution and Lung Cancer

Estimated Deaths

Globally (2017)

- 1.88 million total deaths
- 265,267 deaths attributable to air pollution
- 14.1 % of all lung cancer deaths
- One in seven lung cancer deaths

United States (2020)

- 136,000 total deaths
- 6392 deaths attributable to air pollution
- 4.7% of all lung cancer deaths
- One in twenty lung cancer deaths

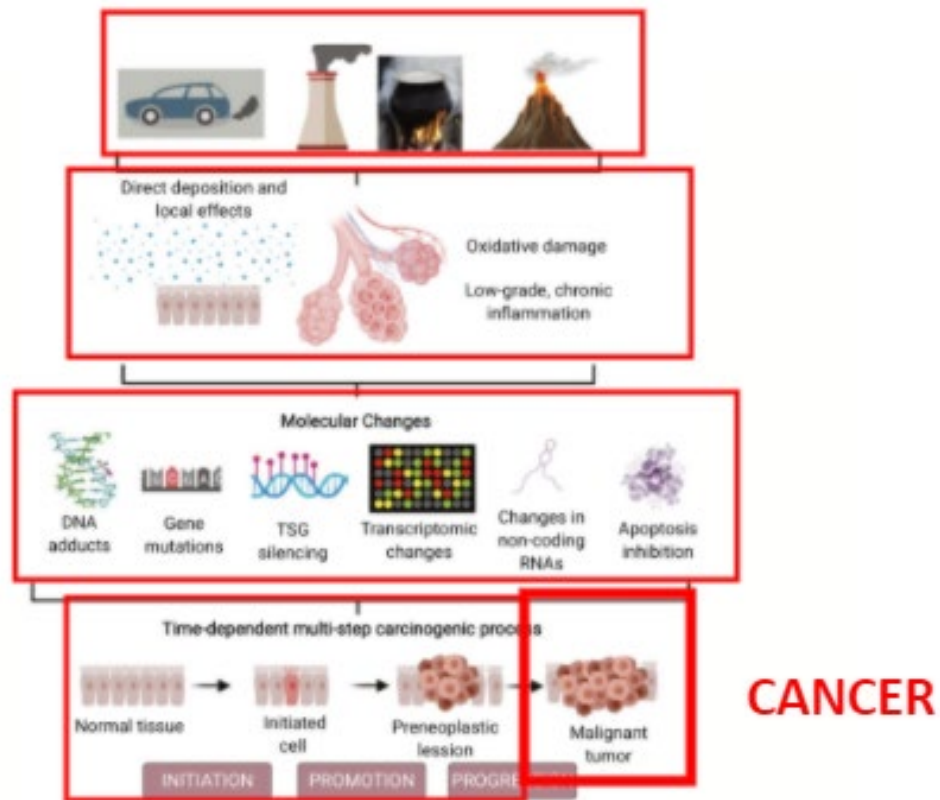*Turner, C. CA CANCER J CLIN 2020; 70:460-479*

CANCER

FIGURE 4. Air Pollution-Related Cancer: Potential Pathways and Mechanisms. TSG indicates tumor-suppressor genes.

Turner, C. CA CANCER J CLIN 2020; 70:460–4

Global Burden of Disease Study: Attribution to Ambient Air Pollution

Cohen AJ et al
Lancet 2017:389:1907-18.

METHODOLOGY

- Estimates of deaths from lung cancer in countries across the globe

- Estimation of Particulate Matter (PM ≤ 2.5 microns) exposure
  - Satellite measurements and surface measurements used
  - Transport and geographical data
  - Aggregated gridded exposure concentrations to national-level population-weighted means

- Risk estimates were from studies of ambient air pollution, household air pollution, second-hand smoke exposure and active smoking

- Population-attributable fraction then estimated with combination of estimates of exposure and relative risk

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Selected Countries in 2019:

Lung Cancer Deaths Attributed to Particulate Matter Age 50 - 69

	Rank	Attributable Deaths/100,000 Ages 50 – 69 (Uncertainty Interval)		Adult smoking (%)	Particulate Matter 2.5 µm (µg/m³)
Serbia	1	36.88	(25.04-51.61)	41.7 %	24.3
Poland	5	27.97	(19.74-38.3)	28.0 %	16.9
China	8	24.63	(17.89-32.95)	24.7 %	34.7
Mongolia	13	19.71	(12.78-29.14)	26.5 %	46.4
Turkey	15	19.2	(12.93-27.08)	26.0 %	18.7
India	81	6.88	(4.9 -8.89)	11.1 %	51.9
United States	176	3.91	(1.89 – 6.58)	17.3 %	9.6

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Sources of air pollution in these countries

- Transportation

- Indoor cooking

- Energy sources: % of energy production from coal
  - Serbia   70%
  - Poland   74%
  - China   65%
  - Mongolia   80%
  - Turkey   35%
  - India   57%
  - US   19%

https://www.statista.com/statistics/689572/share-of-coal-energy-in-global-generation-by-country-and-type/

TAKE HOME MESSAGE

- Fourteen percent of all lung cancer deaths worldwide are attributable to air pollution and risk varies worldwide
- Sources of air pollution include fossil fuel plants, transit and indoor cooking modules
- Both smoking and air pollution are important causes of lung cancer
- Both need to be eliminated to help prevent lung cancer and save lives
- As lung cancer professionals, we can mitigate the effects of air pollution on causing lung cancer by speaking out for clean energy standards

dtcooke@ucdavis.edu
@DavidCookeMD