PRISMA HEALTH SM

Lung Cancer Screening & Tobacco Cessation

Sarah Tomashefski, NP

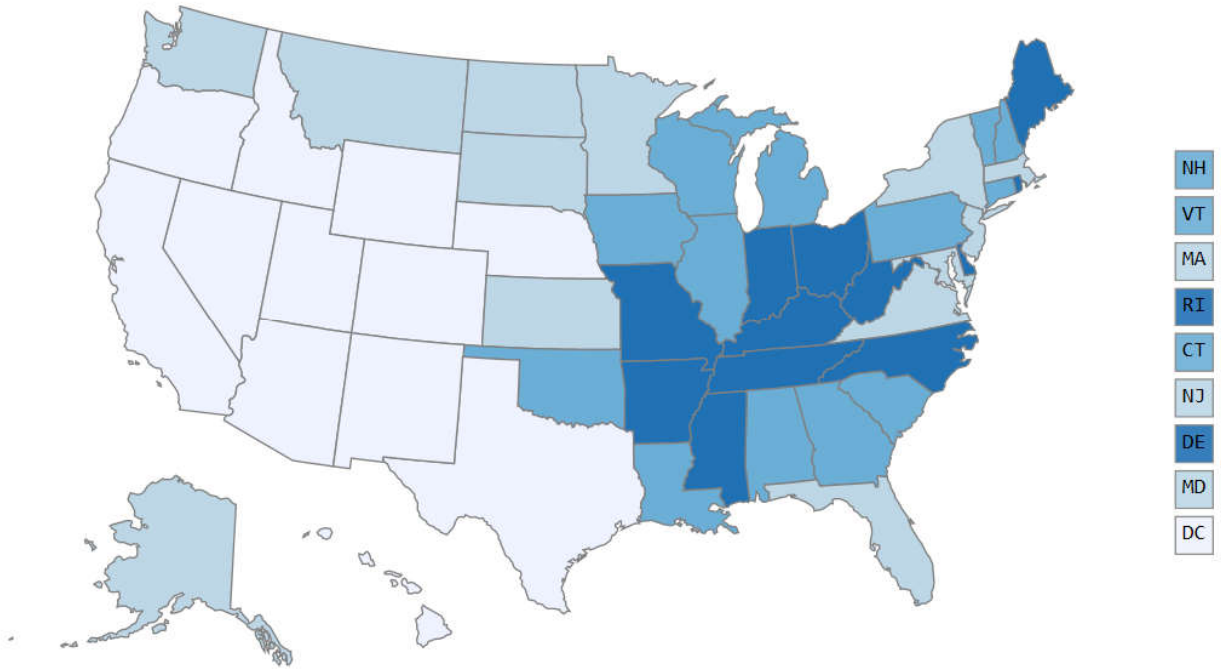
Objectives

- Review impact of Lung Cancer in US
- Discuss Lung Cancer Screening and how it can be used for early detection
- Understand the process of Lung Cancer Screening enrollment and continued screening recommendations
- Identify the providers role in tobacco cessation counseling and the pharmacologic options available to aide in cessation
- Gain knowledge regarding E-cigarette use & vaping as a new area of concern

Rate of New Cancers in the United States

Lung and Bronchus, All Ages, All Races/Ethnicities, Male and Female
Rate per 100,000 people

Map | Table | Chart | Export

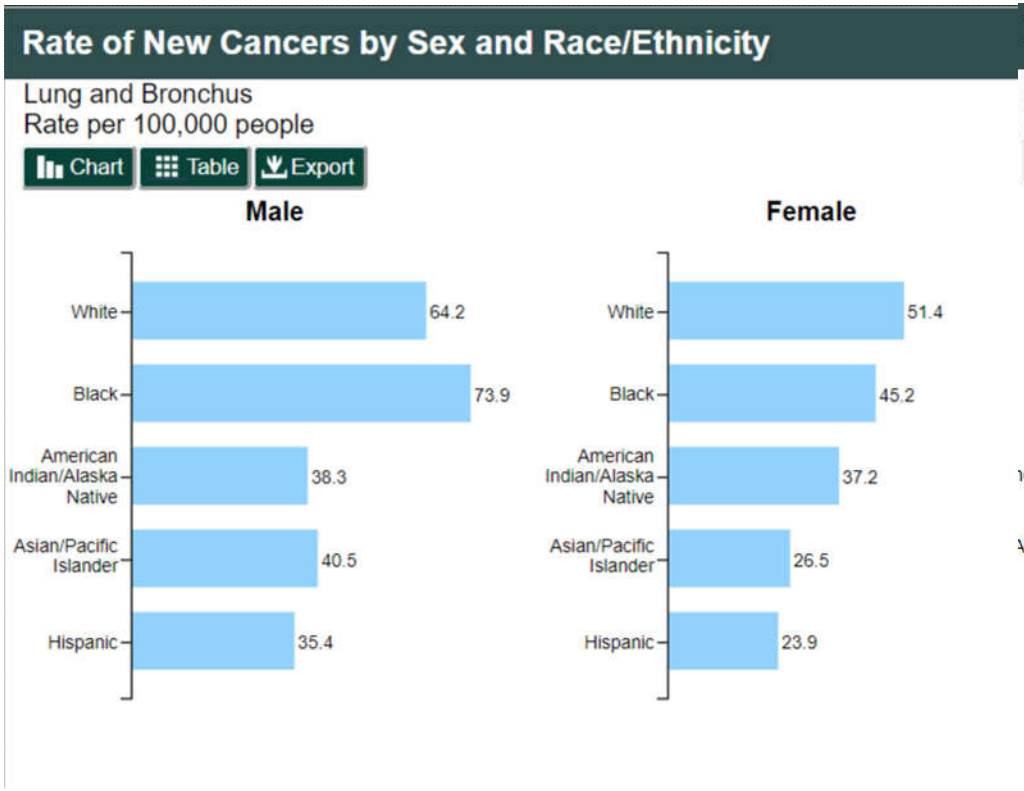


Rate per 100,000 people

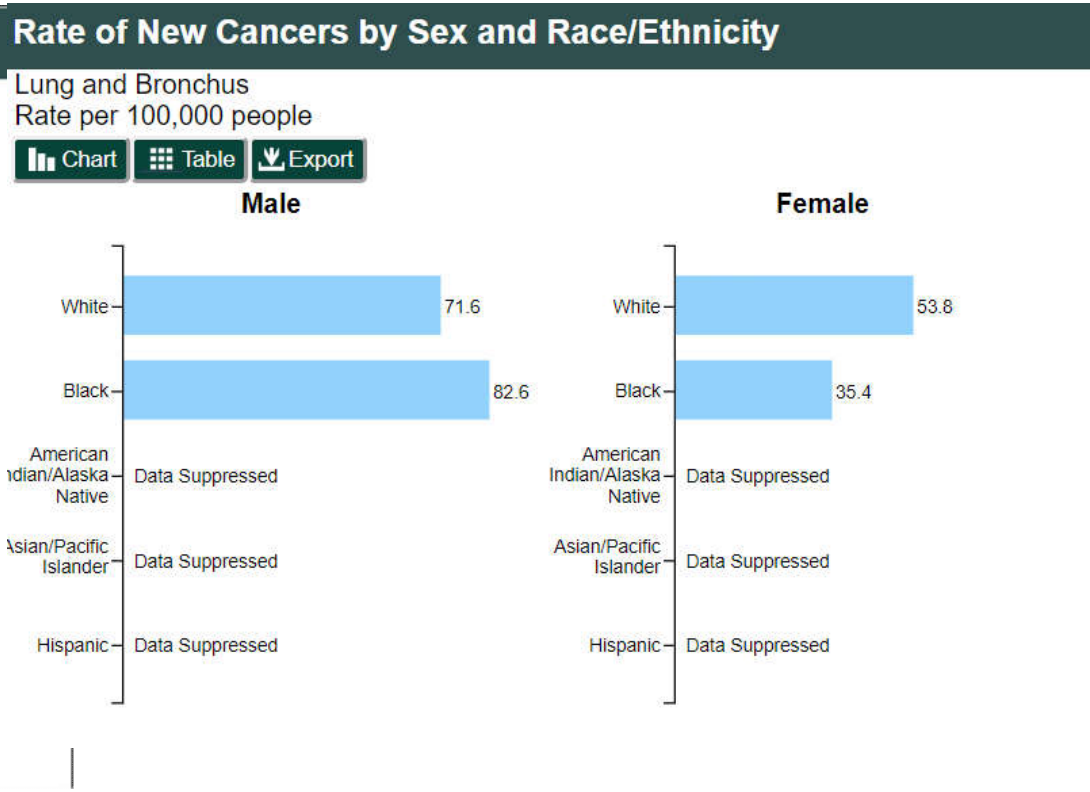
25.1 - 51.2 | 52.2 - 58.2 | 58.3 - 64.2 | 64.9 - 86.8

CDC, 2016

United States



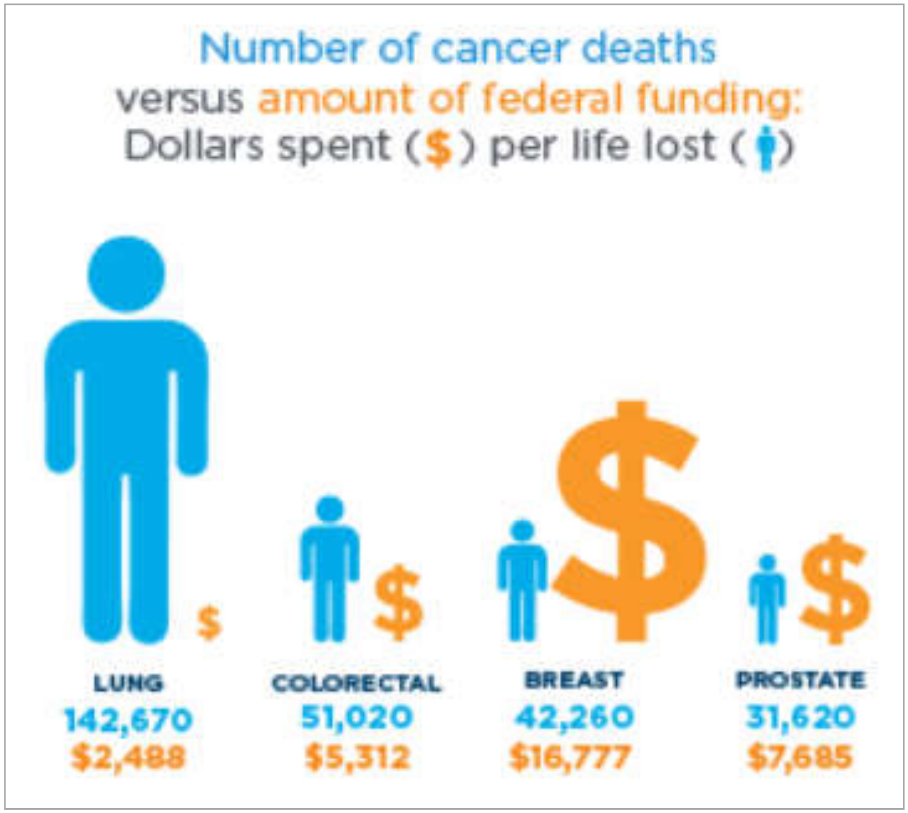
South Carolina



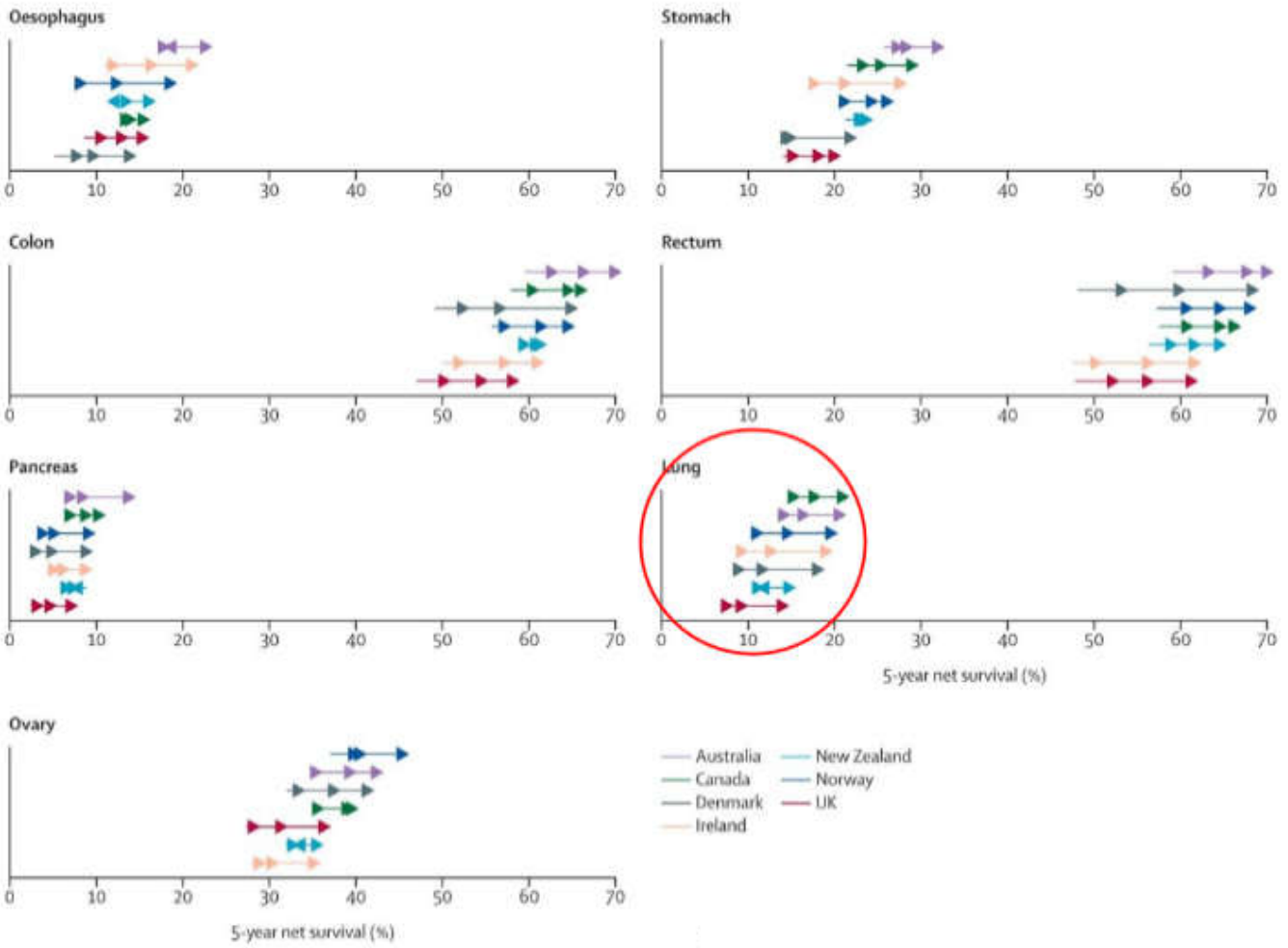
CDC, 2016

Lung Cancer Stats 2019

- Lung cancer is the leading cause of cancer death
- More lives are lost to Lung CA than to colorectal, breast, and prostate cancers combined
- 228,000 people in the US will be diagnosed with lung cancer this year
- 142,670 people will die of Lung CA this year

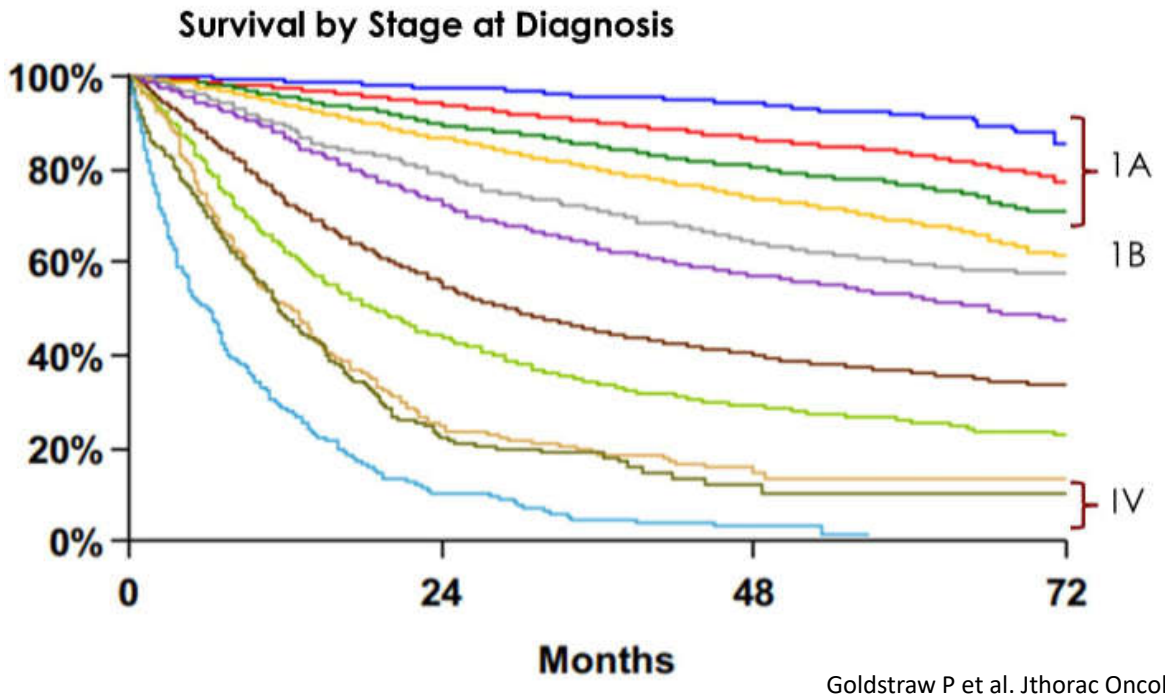


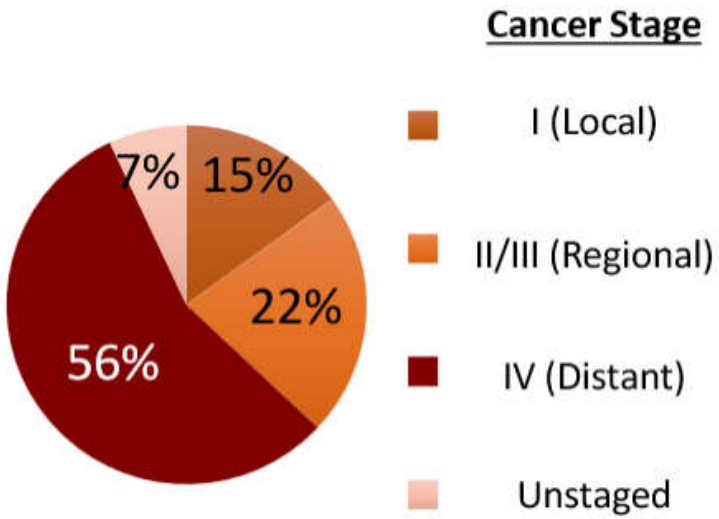
LUNGevity, 2019



The Lancet Oncology, 2019 DOI: (10.1016/S1470-2045(19)30456-5)

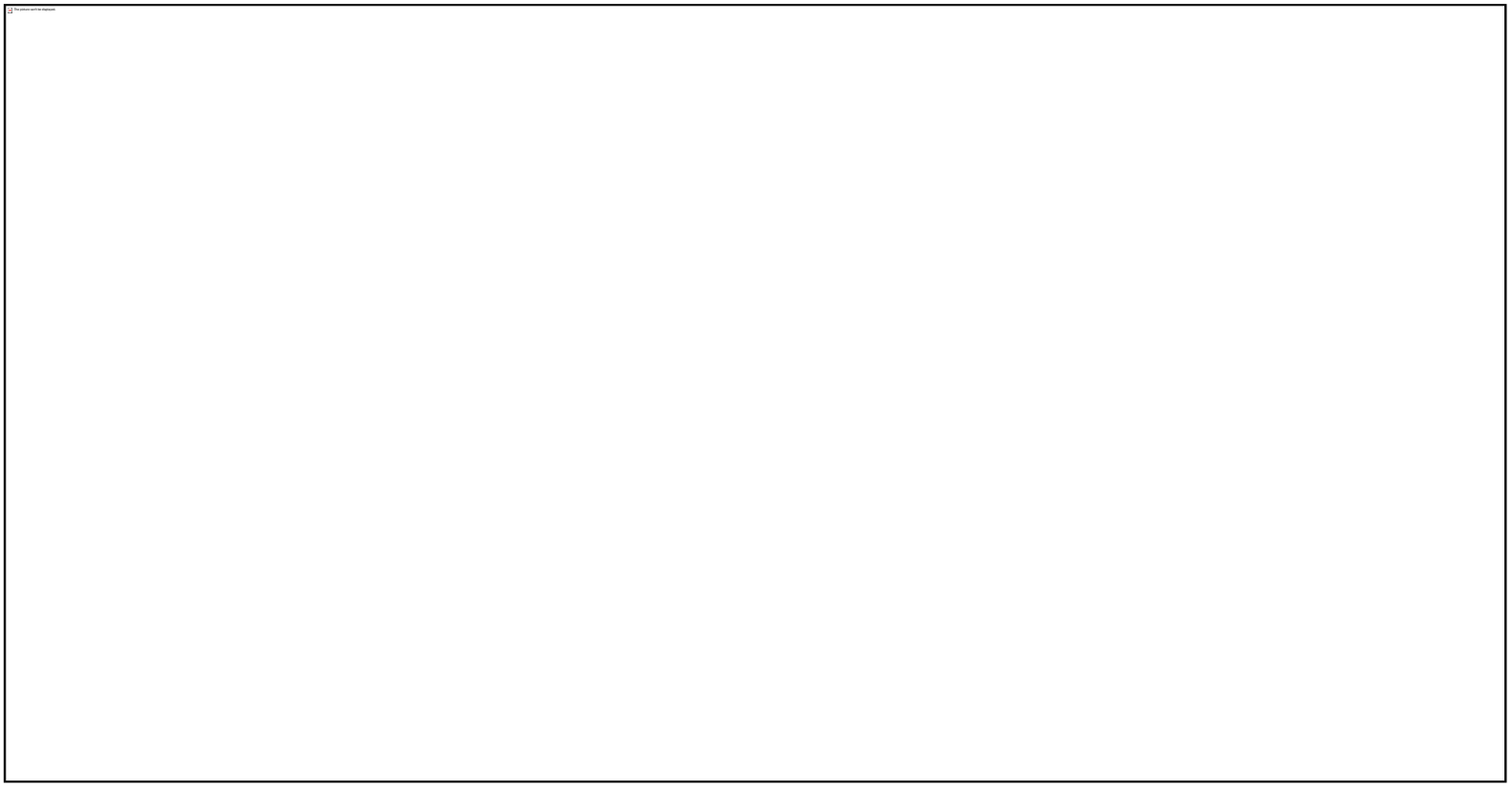
Early diagnosis is KEY!





Goldstraw P et al. Jthorac Oncol 2015. 11 (1) 39-51. Http://seer.cancer.gov/statfacts/html/lungb.html

Global Impact of Lung Cancer

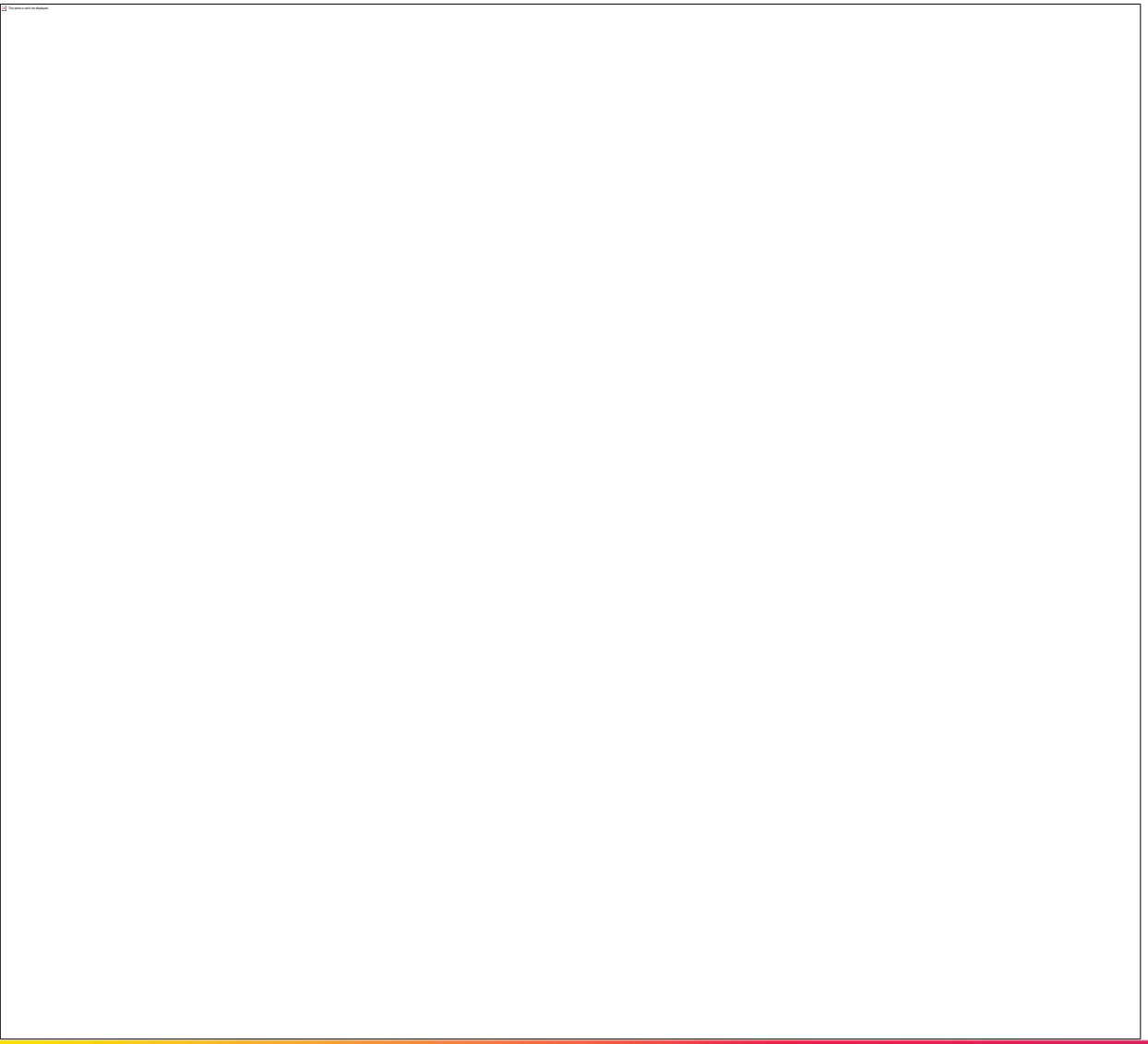


http://globocan.iarc.fr/factsheets/cancers/lung.asp#INCIDENCE1

Lung Cancer Screening

- Annual “low dose” Chest CT scan
- High risk patients

Goal: early lung cancer diagnosis



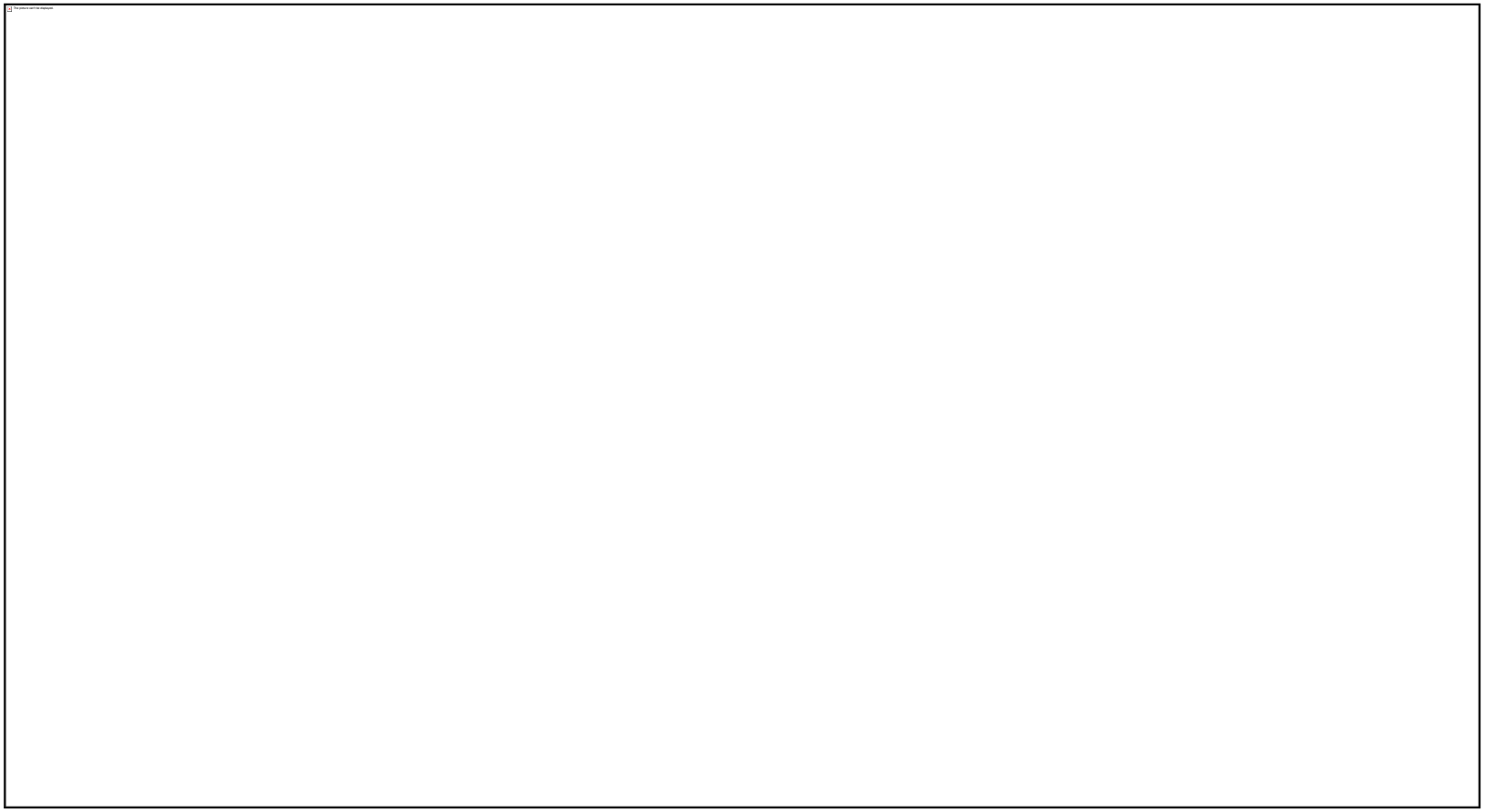
The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 AUGUST 4, 2011 VOL. 365 NO. 5

Reduced Lung-Cancer Mortality with Low-Dose Computed Tomographic Screening

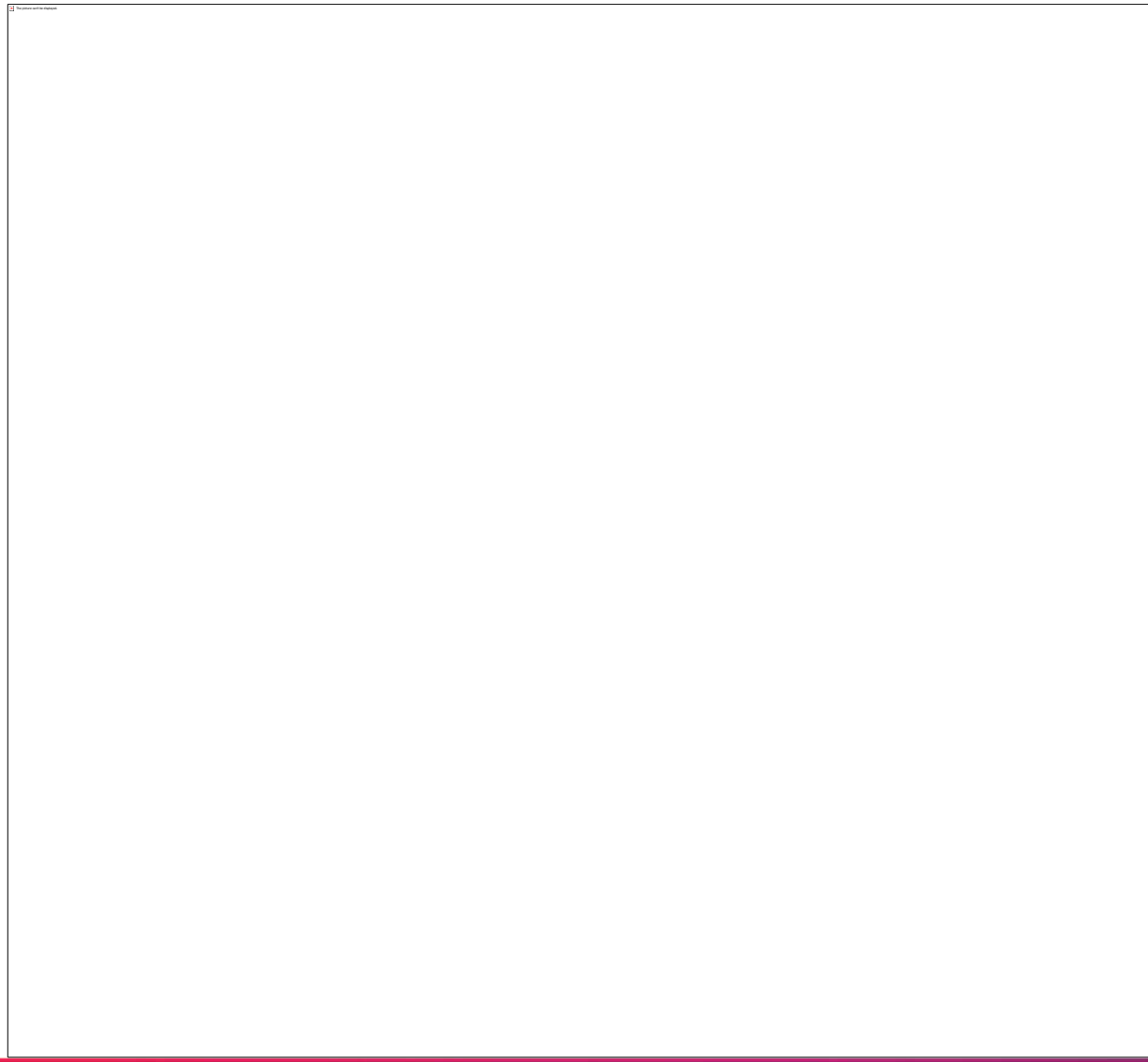
The National Lung Screening Trial Research Team

Criteria for Lung Cancer Screening

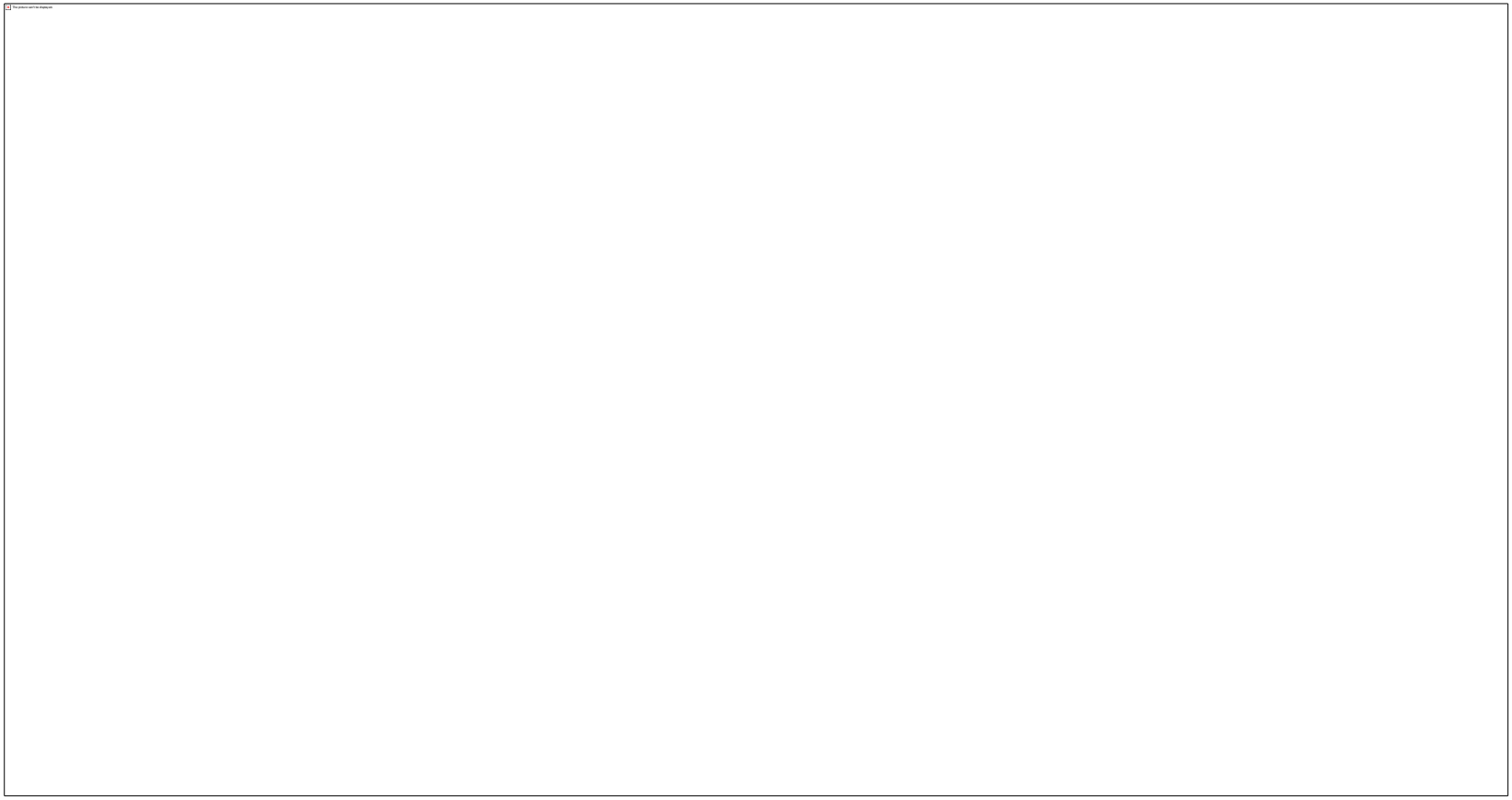


Who are we screening?

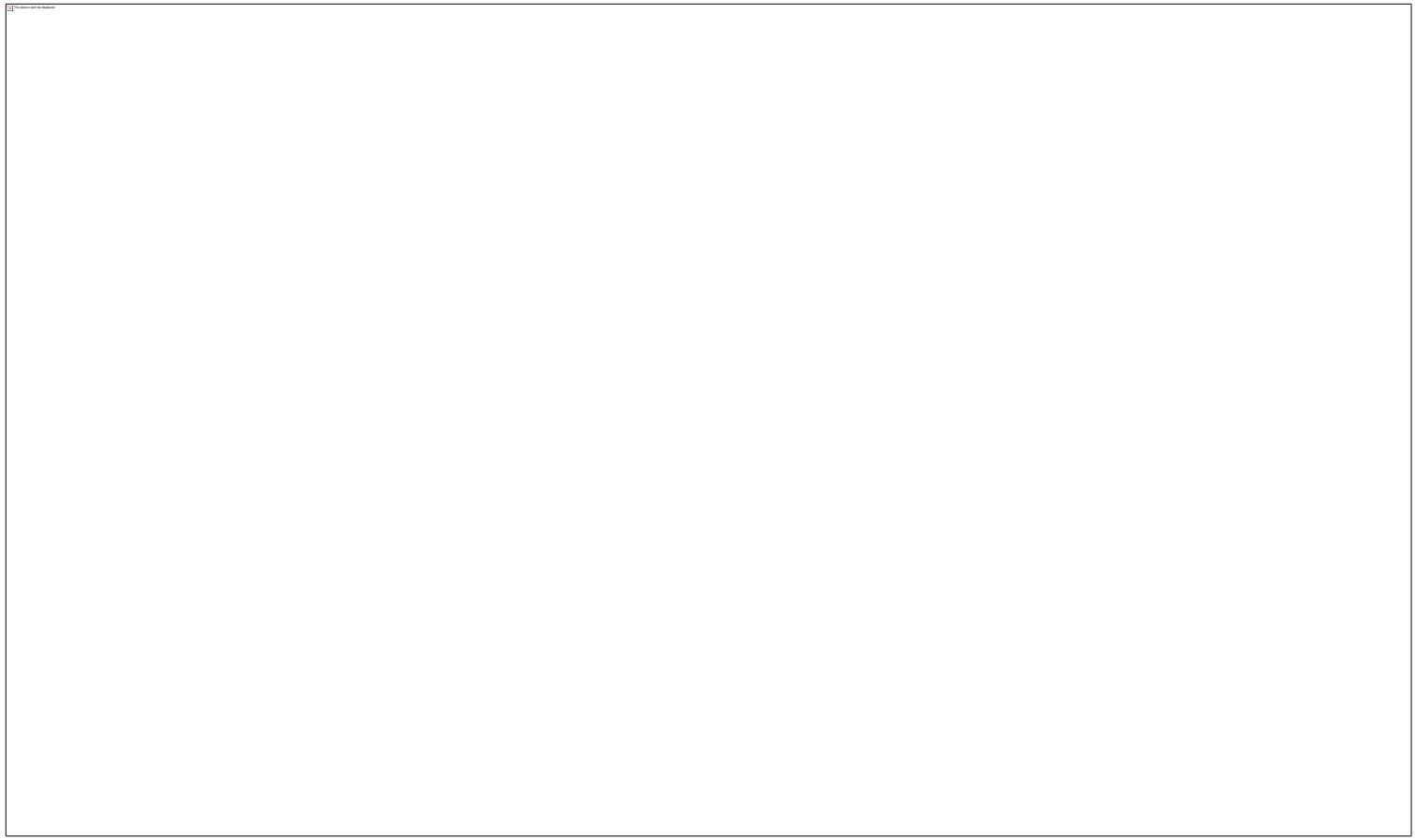
- Only 4% of eligible people have been screened
  - Trending up
- When compared with the NSLT:
  - More minorities
  - Less education
  - More current smokers
  - More comorbidities
- Populations have different risks



NSLT vs. Real World – How does it differ?



Where are patients being screened?



How does screening work?

1. Identify patients who qualify
2. Perform shared decision making (required by CMS)
3. Order & complete CT
4. Scan is interpreted by radiology using Lung Rads Criteria
5. Abnormal scans reviewed at a multidisciplinary conference
6. Appropriate follow up is given

Shared decision making visit

- History:
  - Work exposures
  - Surgery or injury
  - Family history
  - Personal history of malignancy
  - Pets
- Physical exam: Absence of signs or symptoms of Lung Cancer
  - Unexplained weight loss, hemoptysis

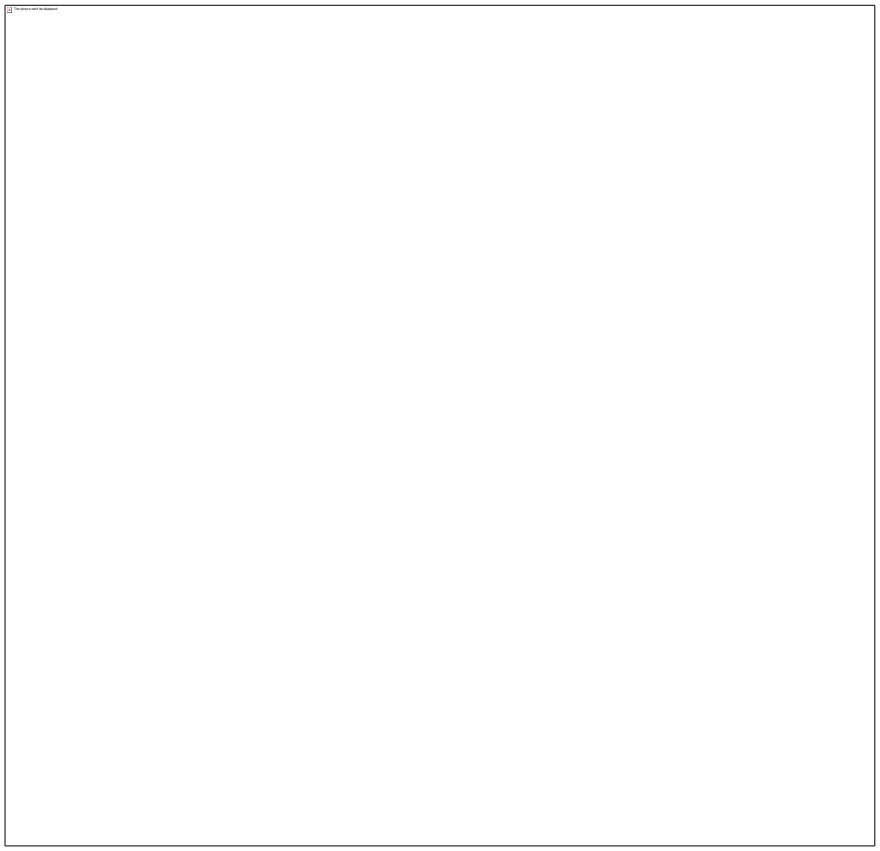
Lung Cancer Screening

Benefits

- Early lung cancer diagnosis
- Lives saved

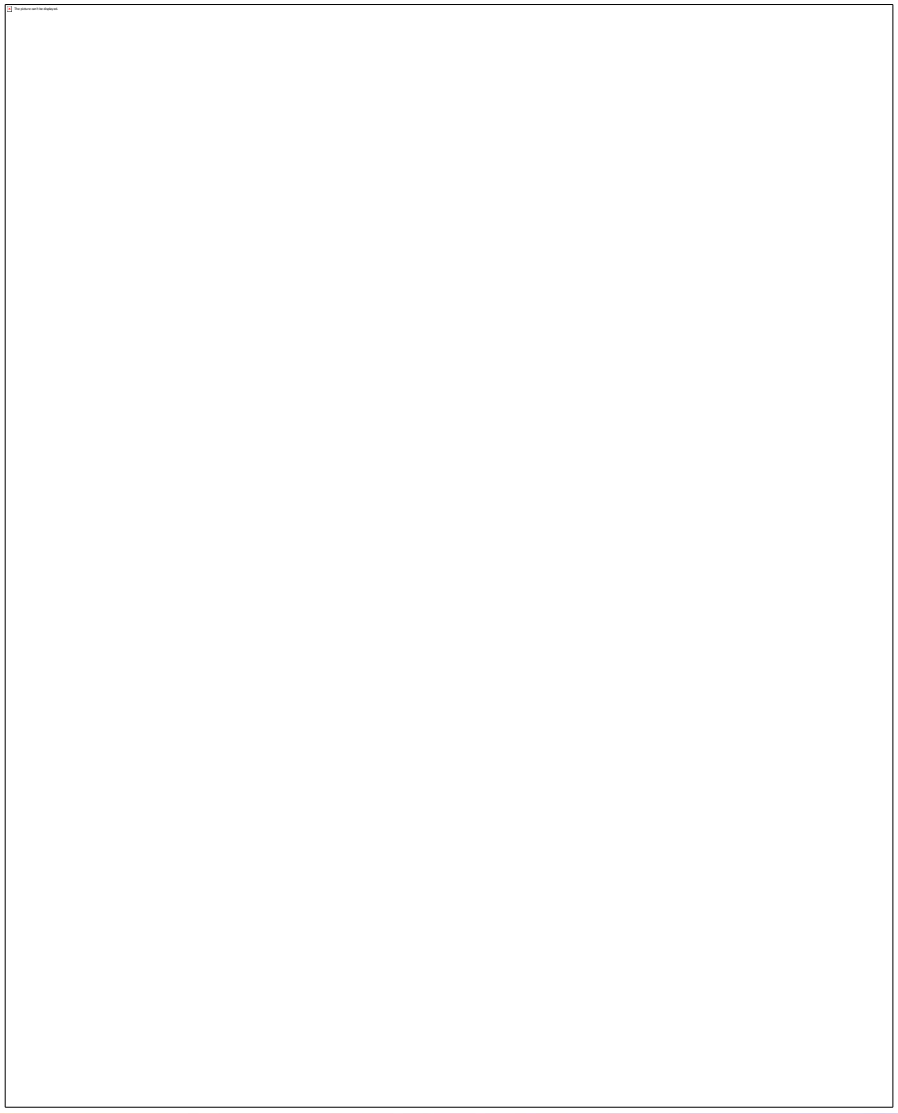
Risks

- Radiation exposure
- False positives
- Over diagnosis

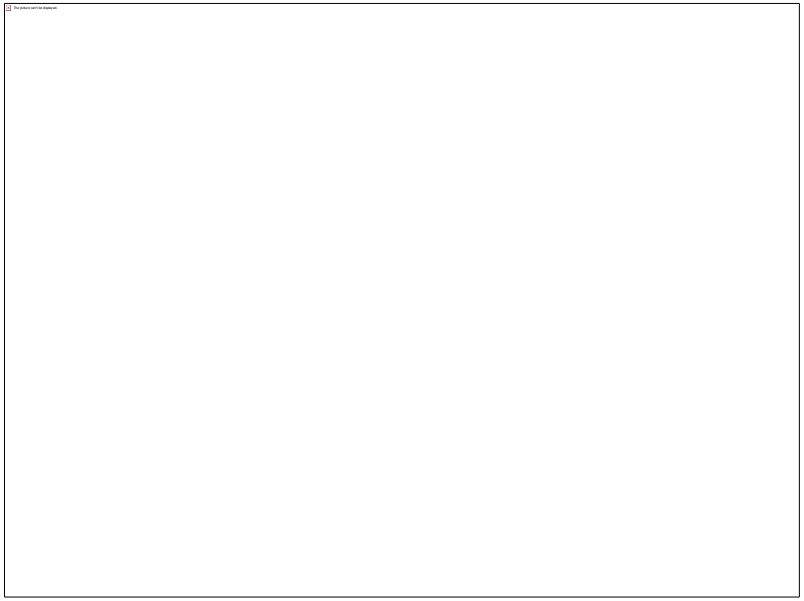


Lung RADS Criteria

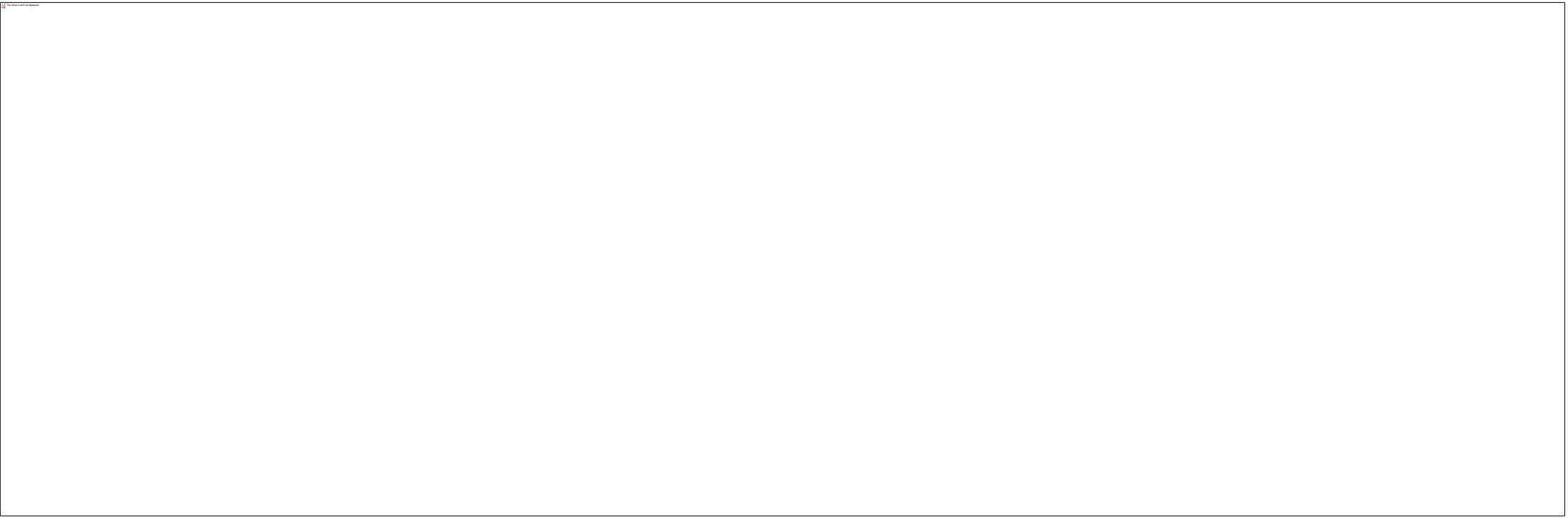
2019



Pulmonology
Thoracic Surgery
Radiology
Oncology



Multidisciplinary Conference



Initial scan

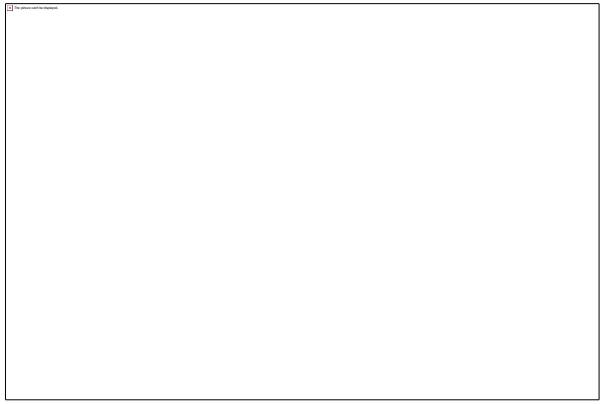
Follow up

1st LDCT

Annual LDCT
12 months later

Incidental findings- what do we do with it all??

- NLST 10%
- VA study 40%



- Coronary artery calcifications
- Osteoporosis
- Emphysema
- ILD
- Renal cyst
- Hepatic cyst
- Thyroid Nodules
- Rib Fractures

Screening Barriers

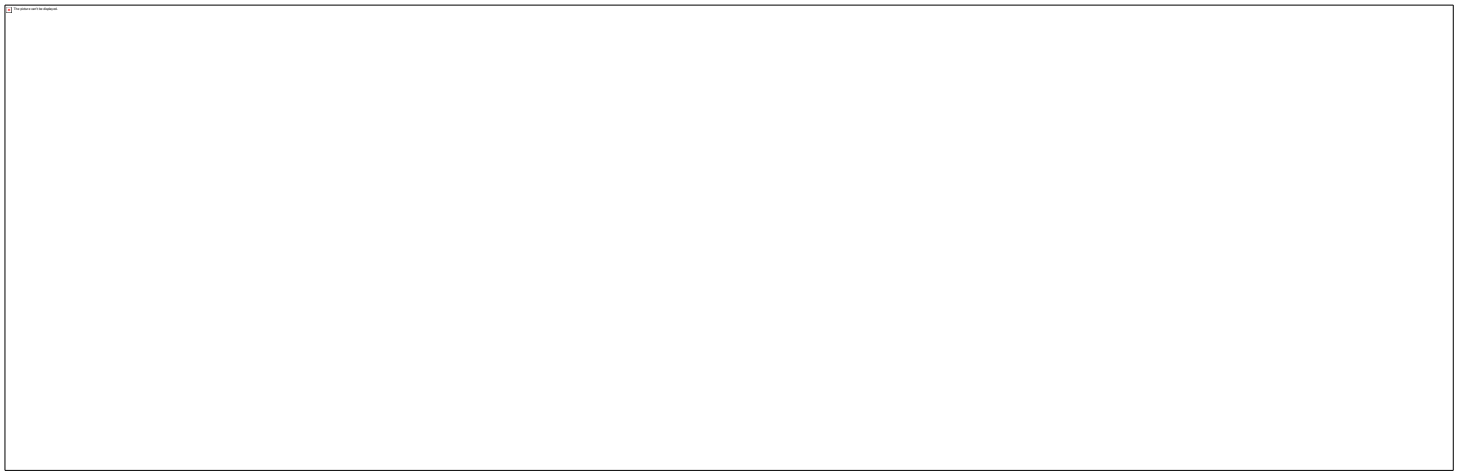
For Patients

- Lack of patient knowledge about screening
- Cost
- Transportation issues
- Stigma
- Current smoker
- No current symptoms
- Fear of results

For Programs

- Staffing
- Appointment availability
- Internal workflow challenges patient tracking, registry
- Lack of support from referring Providers
- Insurance & Billing
- Providers aren’t aware of screenings

Adherence to screening– How important is it?



System Interventions

Dedicated navigator

Actively contact patients (letters, follow up)

Engage radiology technicians

Patient Interventions

Excellent shared decision making visits

Providing adequate education

Destigmatize

Future Research: Nelson Trial

- 2nd largest randomized control trial (over 15,000 patients)
- Population: Younger Age, Less smoking
- Men 84% Women 16%
- Comparison: Volume doubling time compared to standard of care (no screening)
- Schedule: Baseline, 1 yr, 3 yrs, 5.5 yrs

Outcomes:

- Men had a 26% relative risk reduction in lung cancer death
- Women had up to a 61% relative risk reduction in lung Cancer death
- Stage shift to earlier cancers
- 69% of Cancers were Stage 1A/1B
- Many false positives (but lower than NSLT)

International Lung Cancer Screening Trial

- Completed in US, Canada, UK, Germany, and Australia
- Compared Screening Selection models
  - PLCOm2012 model risk ≥1.5%
  - USPSTF guidelines
- Patients received 2 annual screens and are followed for 6 years
- 5013 patients screened, 110 Cancers found
- 99% of Cancers were found using the PLCOm2012 Model alone compared with 77% using USPSTF criteria
- Still an active trial (started in 2016)

Presented at CHEST, 2019

Tobacco Cessation

- Smoking is the chief avoidable cause of death in the US
- One person a minute dies from tobacco abuse
- Younger you are when you start smoking, the more addicted you become
- Lung Cancer Screening can be used as a “teachable moment”

Smoking: leading preventable cause of mortality

- **A**sk about tobacco use
- **A**dvise quitting
- **A**ssess readiness to quit
- **A**ssist smokers ready to quit
- **A**rrange follow-up

Stages of Change

- Pre-contemplation (not ready to quit)
- Contemplation (considering a quit attempt)
- Preparation (actively planning a quit attempt)
- Action (actively involved in a quit attempt)
- Maintenance (achieved smoking cessation)

Nicotine withdrawal

Symptoms:

- increased appetite and weight gain
- changes in mood (dysphoria or depression)
- insomnia
- irritability
- anxiety
- difficulty concentrating
- restlessness

Smoking Cessation

- Behavioral counseling
  - Smoking cessation programs
  - 1-800-quit-now
  - SC Quit for Keeps
- Pharmacologic intervention
  - NRT products
  - Wellbutrin
  - Chantix
- Other treatments
  - Financial incentives
  - Hypotherapy
  - Accupunture

Chantix (Varenicline)

Dosing:

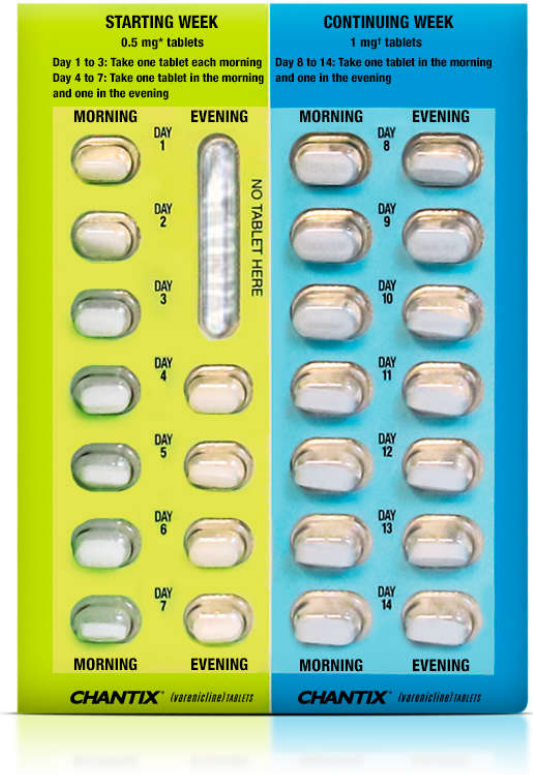
- Days 1 to 3: 0.5 mg once daily
- Days 4 to 7: 0.5 mg twice daily.
- Maintanence (Day 8+) 1 mg twice daily

Duration: 12 weeks, may prolong course

Administration: w/food and with a full glass of water

Adverse Effects: Headache (12% to 19%), insomnia (9% to 19%), abnormal dreams (8% to 13%), irritability (11%), suicidal ideation (11%), depression

Black box warning was <u>REMOVED</u> in 2016



Wellbutrin (Bupropion)

Dosing: 150 mg SR Tablet once daily for 3 days; increase to 150 mg twice daily (maximum dose: 300 mg/day).

- ❑Should begin at least 1 week before target quit date
- ❑Continue for 12 weeks (may continue longer if helpful)
- ❑If no significant progress by the seventh week of therapy, success is unlikely, consider stopping

Contraindicated: Patients w/ seizure disorder or a predisposition to seizures

Nicotine Replacement Products

- Patches
  - ➢Smoking >10 cigarettes/day: Begin with 21 mg patch for 6 weeks
  - ➢Smoking ≤10 cigarettes/day: Begin with 14 mg/day for 6 weeks
- Gum
  - ➢1 piece every 1 to 2 hours
  - ➢Dosage: 4mg, 2mg
- Lozenges
  - ➢1 lozenge every 1 to 2 hours
  - ➢Dosage: 4mg, 2mg
- Inhalers
  - ➢6 to 16 cartridges/day
- Nasal spray
  - ➢1 to 2 doses/hour

Hospitalized smokers

- NRT products are used 1st line due to rapid onset
- Risk of nicotine withdrawal symptoms outweighs potential risks of NRT
- Continue at discharge

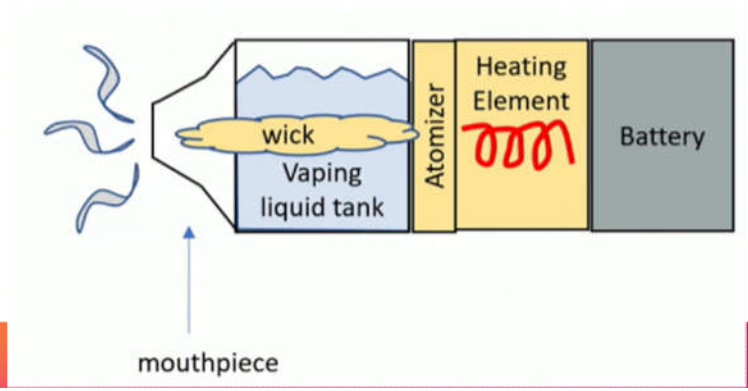
Adolescence

- 90 percent of adult smokers smoked their first cigarette before the age of 18
- Treatments:
  - 1st line- Behavorial therapy, websites, apps
  - 2nd line-NRT products- three NRT products are sold without prescription to adults (patch, lozenge, and gum), but a prescription is needed for sale to those younger than 18 years

VAPING is not the alternative

E-Cigarettes/Vaping

- First introduced into US in 2007
- Vaping: using an electronic nicotine delivery device to inhale a substance
- Now come in many different shapes and sizes
- Contains: Nicotine, Propylene glycol, Vegetable glycerine (proplents),benzoic acid, flavorings, and ???

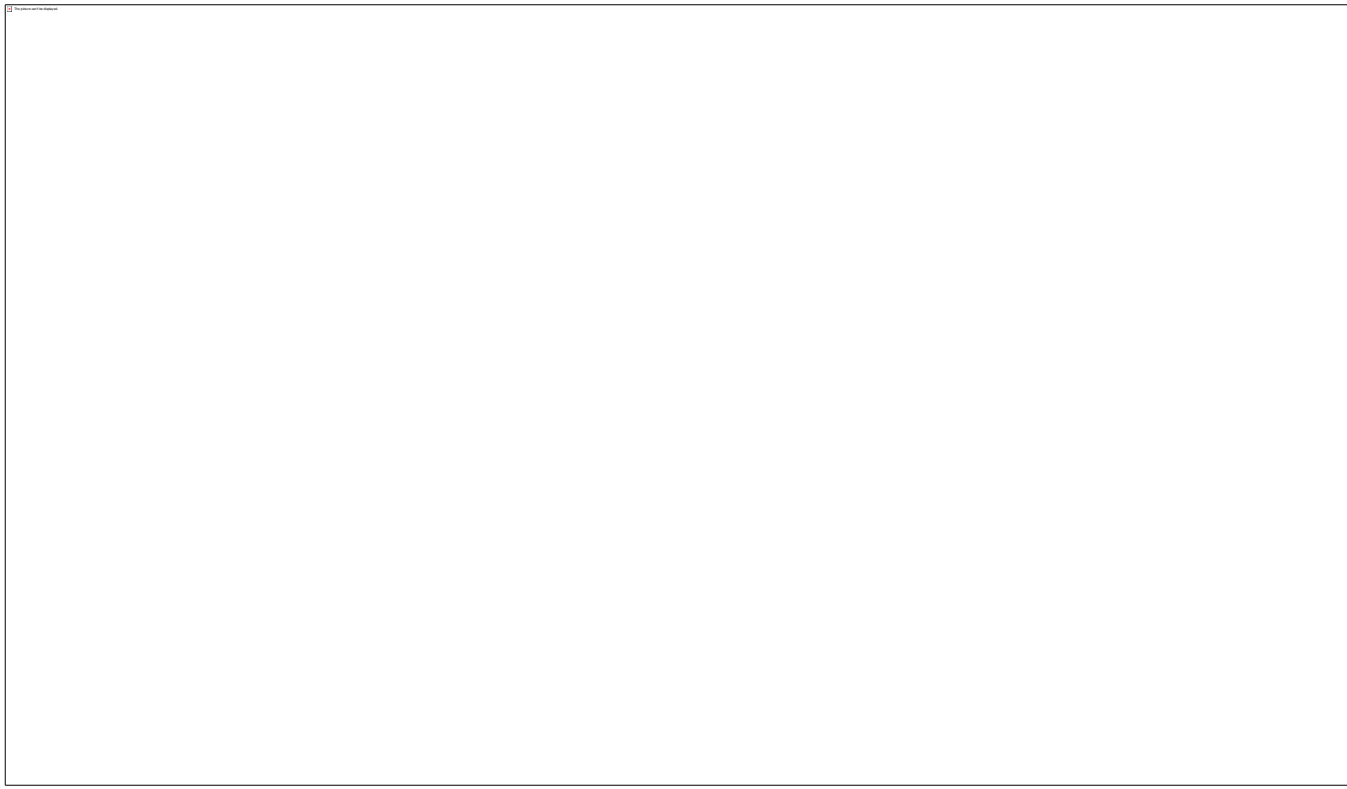


How much are you Vaping?

Vaping:

How does this affect patients quit rates?

Is it safer than smoking?



Up to date, 2020

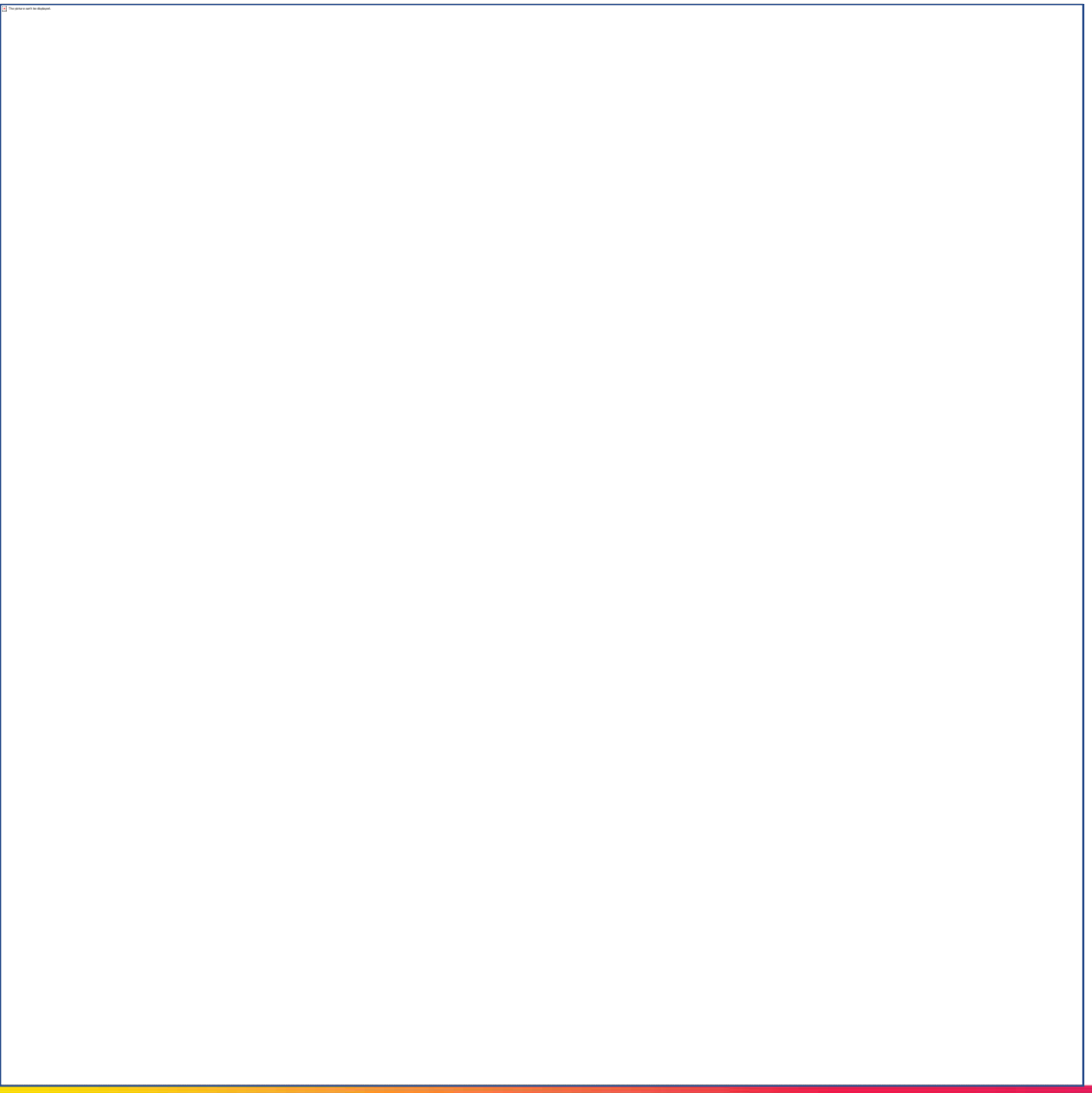
***Biggest concern: Adolescent Population

E-cigarette or vaping product use associated lung injury (EVALI)

- Most common thread: using THC in E-liquid & Vitamin E acetate
- Sweet flavors have produced more respiratory complaints

As of January 7, 2020:

- A total of 2,602 hospitalized EVALI cases or deaths have been reported to CDC from all 50 states, the District of Columbia, and two U.S. territories
- Fifty-seven deaths have been confirmed in 27 states and the District of Columbia



Conclusion

- Lung Cancer is the leading cause of Cancer death in US
- Smoking Cessation is still the #1 intervention in prevention of Lung Cancer
- Vaping is not the alternative
- Lung Cancer screening has shown a mortality benefit
- All screenings continue to carry risk

References

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-Up to Date (2020)


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