## Interventions to clear the Air-From Smog, to Smoke, to Vape

**Prof Luke Clancy, Director General** 

**TobaccoFree Research Institute Ireland, TU Dublin** 



The 16<sup>th</sup> UK and Ireland Occupational and Environmental Epidemiology Conference 2023

Grangegorman Campus, Technological University Dublin (TUDublin), 9 June 2023

## **Improving Air Quality**

1:Dublin Smog- 1990

Ban on sale, marketing and distribution of bituminous coal- S.I. 1<sup>st</sup> September 1990

2:Smoke filled Pubs- 29<sup>th</sup> March 2004

Public Health (Tobacco) (Amendment) Act 2004 (Commencement) Order 2004

3:New challenge to Tobacco Endgame in Ireland-E-Cigarettes

# Smogfree Ireland 1990-2023

1





#### Waterloo Bridge, 1900

## Daytime in Dublin Jan. 1982



#### New York 2023

![](_page_5_Picture_1.jpeg)

#### **DUBLIN 1982**

The SMOG event was associated with a cold spell of weather with a temperature inversion.

This event was 30 years after the infamous London 1952 episode.

![](_page_6_Picture_3.jpeg)

#### Dublin 1982 Case Fatality Rates Kelly Ian and Clancy Luke, Irish Medical Journal; 77:10: 322-324. 1984

![](_page_7_Figure_1.jpeg)

![](_page_7_Picture_2.jpeg)

#### London 1952

![](_page_8_Figure_1.jpeg)

![](_page_9_Picture_0.jpeg)

#### Mortality in a general hospital and urban air pollution.

Kelly I, Clancy Luke, Ir Med J. 1984 Oct; 77(10):322-4.

![](_page_9_Picture_3.jpeg)

#### Towards a planned improvement in Dublin's air quality

![](_page_10_Picture_1.jpeg)

Oct 1985

COAL INFORMATION SERVICES

#### **ACKNOWLEDGEMENTS (from CIS)**

In compiling this casebook we wish to gratefully acknowledge the contributions made by the following people and organisations

Geoffrey J. Bourke,	M.D., F.R.C.P.I., Professor of Community Medicine ar Epidemiology, University College, Dublin.	nd
Frank J. Convery,	Heritage Trust Professor of Environmental Studies, University College, Dublin.	
W.J.R. Couchman	F.R.S.H., F.I.D.H.E., Couchman & Associates, Consulting Engineers, Foxrock, Dublin 18.	
John Kelly,	B.E., Ph.D., Dean of Faculty of Engineering & Architecture, University College, Dublin.	
Hugh Munro,	B.E. C.Eng., F.I.E.I., F.C.I.B.S., Consulting Engineer, 56 Tritonville Road, Dublin 4.	
Peter Skrabanek,	Ph.D., Lecturer in Community Medicine, Trinity College, Dublin.	
National Coal Board,	London and Glasgow.	e e

![](_page_11_Picture_3.jpeg)

## 1st SEPT 1990

Smokey coal ban

Sale

Marketing

**Distribution** 

![](_page_12_Picture_5.jpeg)

![](_page_13_Figure_0.jpeg)

**Dublin Borough** 

![](_page_13_Picture_2.jpeg)

## Dublin Black Smoke levels before and after the intervention

![](_page_14_Figure_1.jpeg)

![](_page_14_Picture_2.jpeg)

# Excess mortality1982 SMOG event against average 1980-1996

<b>Respiratory</b>	Cardiovascular	Total
	Weekly data	
33 (122%)	34 (65%)	83 (73%)
	Monthly data	
91 (77%)	71 (30%)	172 (34%)

![](_page_15_Picture_2.jpeg)

#### **Some Data Points**

Individual stations recorded BS levels up to 1400 micrograms/m<sup>3</sup> during the SMOG

Mortality average of 16 deaths/day for Jan 22 deaths/day in SMOG episode

Max 38 deaths on 14th Jan

![](_page_16_Picture_4.jpeg)

## **Observations**

Half of the Cardiovascular excess mortality occurred during the week of the SMOG

Two thirds of the excess Respiratory Mortality occurred <u>after</u> the SMOG had subsided.

The Dublin SMOG event gave rise to about 33 excess deaths per 100,000 of population (London 1952 approx. 47).

![](_page_17_Picture_4.jpeg)

#### Effect of air-pollution control on death rates in Dublin, Ireland: an intervention study.

Clancy L, Goodman P, Sinclair H, Dockery DW. Lancet. 2002 Oct 19;360(9341):1210-4.

![](_page_18_Picture_2.jpeg)

![](_page_19_Picture_0.jpeg)

#### **Smokefree Ireland**

29<sup>th</sup> March 2004

Public Health (Tobacco) (Amendment) Act 2004 (Commencement) Order 2004.

![](_page_19_Picture_4.jpeg)

![](_page_20_Picture_0.jpeg)

#### Smokefree Ireland 2004-2023 as a global leader in Tobacco Control

![](_page_21_Picture_1.jpeg)

![](_page_22_Picture_0.jpeg)

*"I believe that in every decade, we are presented with one major choice - a choice where, if we call it right, we change the future for the better."* 

Micheál Martin TD, Minister for Health and Children, 2003

![](_page_22_Picture_3.jpeg)

![](_page_23_Picture_0.jpeg)

![](_page_23_Picture_1.jpeg)

Health officers patrolled nightspots around the country as the historic "Ash Monday" cigs ban came into force at midnight.

Taoiseach Bertie Ahern hailed the controversial measure, which carries a  $\notin 3,000$  fine, saying the ban had received "overwhelming support".

But Health Minister Micheal Martin admitted it may take months before publicans fully comply with the new law. He said: "We'll be look-

#### By NIALL MOONAN

ing for 90 per cent compliance across all workplaces initially."

Outspoken TD Jackie Healy-Rae warned it will create "absolute mayhem" and force a Government rethink.

Meanwhile, a hotline has been set up on 1890 333 100 so the public can report if they've seen the new law being broken.

And one man, Eamonn Boland, has invented "pint protector" tags designed to safeguard smokers' drinks while they leave pubs to light up.

#### HANDS OFF OUR PINTS: PAGES 4&5

END OF AN ERA: No more cigs in pubs

![](_page_24_Picture_0.jpeg)

#### **Smokefree Outcome Measurements**

SHS Exposure

Particles PM2.5, PM10 Benzene Nicotine

Health Effects

Respiratory Symptoms
Sensory irritation Symptoms
PFT measurements, (FEV1, FVC, P.F)
Carbon Monoxide, Cotinine

![](_page_25_Picture_5.jpeg)

## **Exposure Reduction**

![](_page_26_Picture_1.jpeg)

Goodman P, Agnew M, McCaffrey M, Paul G, Clancy L. Am J Respir Crit Care Med 2007 Jan 4

#### **The Irish experience**

- Smoking in all workplaces including bars and restaurants was banned from 29th March 2004
- A study of air quality (n=42 bars) and respiratory health of bar workers (n=81) before and one year after the ban found:

![](_page_27_Figure_3.jpeg)

*Figure 1.* Whisker plot diagrams showing the medians and interquartile ranges of exhaled breath carbon monoxide levels (ppm) and salivary cotinine levels (ng/ml) before and after the workplace smoking ban (n = 73).

*Effects of the Irish smoking ban on respiratory health of bar workers and air quality in Dublin pubs.* 

OPEN ORCESS Freely available online

PLOS ONE

Reductions in Cardiovascular, Cerebrovascular, and Respiratory Mortality following the National Irish Smoking Ban: Interrupted Time-Series Analysis

Sericea Stallings-Smith<sup>1</sup>\*, Ariana Zeka<sup>1</sup>\*, Pat Goodman<sup>2,3</sup>, Zubair Kabir<sup>4</sup>, Luke Clancy<sup>3</sup>

April 2013 | Volume 8 | Issue 4 | e62063

![](_page_28_Picture_5.jpeg)

#### **Outcome measures-Mortality**

![](_page_29_Picture_1.jpeg)

IHD COPD and STROKE

3,726 fewer smoking-related deaths

![](_page_29_Picture_4.jpeg)

## Conclusions

The workplace ban on smoking in Ireland has been a success

It has helped to safeguard health of workers by reducing their exposure to the harmful effects of SHS

It has resulted in an improvement in symptoms and lung function of workers

It has reduced Cardiovascular, Cerebrovascular and Respiratory Mortality in the general population

It has reduced Health Inequalities in Ireland

It has been copied internationally

![](_page_30_Picture_7.jpeg)

### **Smokefree Ireland Success Factors**

Sustained leadership/commitment Partnerships – (Health alliance, OTC, DOHC) Trade union support Political support- cross party

![](_page_31_Picture_2.jpeg)

#### 3:New challenge to Tobacco Endgame in Ireland-E-Cigarettes

![](_page_32_Picture_1.jpeg)

mailtanslock.com - 557796589

![](_page_33_Picture_0.jpeg)

![](_page_34_Figure_0.jpeg)

#### 30-day cigarette use in 16-year-olds by gender in Ireland and all ESPAD countries

Geography, Gender and Smoking in Europe.

Joan Hanafin, Salome Sunday, Luke Clancy. European Respiratory Journal 2022 60:1954

#### Fig.1 Trend of adolescent e-cigarette prevalence (everuse) in Ireland 2014-2019

![](_page_35_Figure_1.jpeg)

#### Framing of the E-cigarettes Discourse

# Accepting E-cigarettes as just a **Comparator** for Cigarettes

*"Fundamental And Irreconcilable Conflict Between The Tobacco Industry's Interests And Public Health Policy Interests"* 

(FCTC Art.5.3)

![](_page_36_Picture_4.jpeg)

#### **Environmental and individual exposure to secondhand aerosol of electronic cigarettes in confined spaces: Results from the TackSHS Project**<sup>+</sup>

Beladenta Amalia Marcela Fu Olena Tigova Montse Ballbè Yolanda Castellano Sean Semple Luke Clancy Constantine Vardavas Maria J. López Nuria Cortés Raúl Pérez-Ortuño José A. Pascual Esteve Fernández. Indoor Air. 2021;00:1–13. Published online 27 April 2021. <u>https://doi.org/10.1111/ina.12841</u>

![](_page_37_Picture_2.jpeg)

#### E-cigarettes: effective cessation tools or public health threat?

L. Clancy and K. Babineau *QJM: An International Journal of Medicine*, Volume 109, Issue 2, February 2016, Pages 79–81, <u>https://doi.org/10.1093/qjmed/hcv223</u>

effects on smoking among children (Gateway, Common Liability)

- effects on relapse among ex-smokers
- impact on smokefree laws (renormalisation)
- effects on advertising and sponsorship
- influence of the tobacco industry.

#### **Tobacco Control Post Pandemic**

#### Human Rights-

ASH Ireland 2002 - Right to breathe clean air
ENSP 2012- children, gender, race
Children
Sustainable Development Goals (SDG), including SDG 3and 4

#### Environment- electronic cigarette waste

Disposable devices, e-liquid containers, packaging, circuit boards, lithium-ion batteries, and hazardous chemicals

![](_page_39_Picture_5.jpeg)

## **Lessons from the Pandemic Experience**

What have we learned and can we do better in future?

- We must improve our scientific research
  - Our TC monitoring and data collection was inadequate and not embedded in vital national statistics
  - We were unable to answer the basic question about the importance of smoking and e-cigarettes in Sars-Cov-2 infection
- We must invest in stopping this most preventable loss of health and life

![](_page_40_Picture_6.jpeg)

![](_page_40_Picture_7.jpeg)

## **Unprecedented Societal Responses**

![](_page_41_Picture_1.jpeg)

safeguarding the health

of the individual and community placed far ahead of

safeguarding the economy

![](_page_41_Picture_5.jpeg)

![](_page_41_Picture_6.jpeg)

![](_page_41_Picture_7.jpeg)

Decision makers' standard response - willingness to implement improvements and reforms, but the people would not tolerate the cost

# Public Health (Tobacco Products and Nicotine Inhaling Products) Bill May 2023

Stop the flavours **Stop the Plastics** Stop single use devices Stop the inappropriate waste disposal Stop the greenwashing Stop our young people getting addicted Use social media to tell the truth and block misinformation Get serious about health and the environment (again)

![](_page_42_Picture_2.jpeg)

![](_page_43_Picture_0.jpeg)

## Leadership in Tobacco Control

Institutional/ Organisational	Individual	
<ul> <li>Power</li> <li>To encourage</li> <li>To convene</li> <li>To resource</li> </ul>	<ul> <li>Sense of mission</li> <li>Passion &amp; compassion</li> <li>Capacity</li> <li>Competence</li> <li>Confidence in others</li> </ul>	

#### TOBACCOFREE

![](_page_44_Picture_3.jpeg)

#### **RESEARCH INSTITUTE**