



# Evaluation and Monitoring of National Cancer Control Plans

Les Mery • Cancer Surveillance Section

International Agency for Research on Cancer  
Lyon, France

International Agency for Research on Cancer



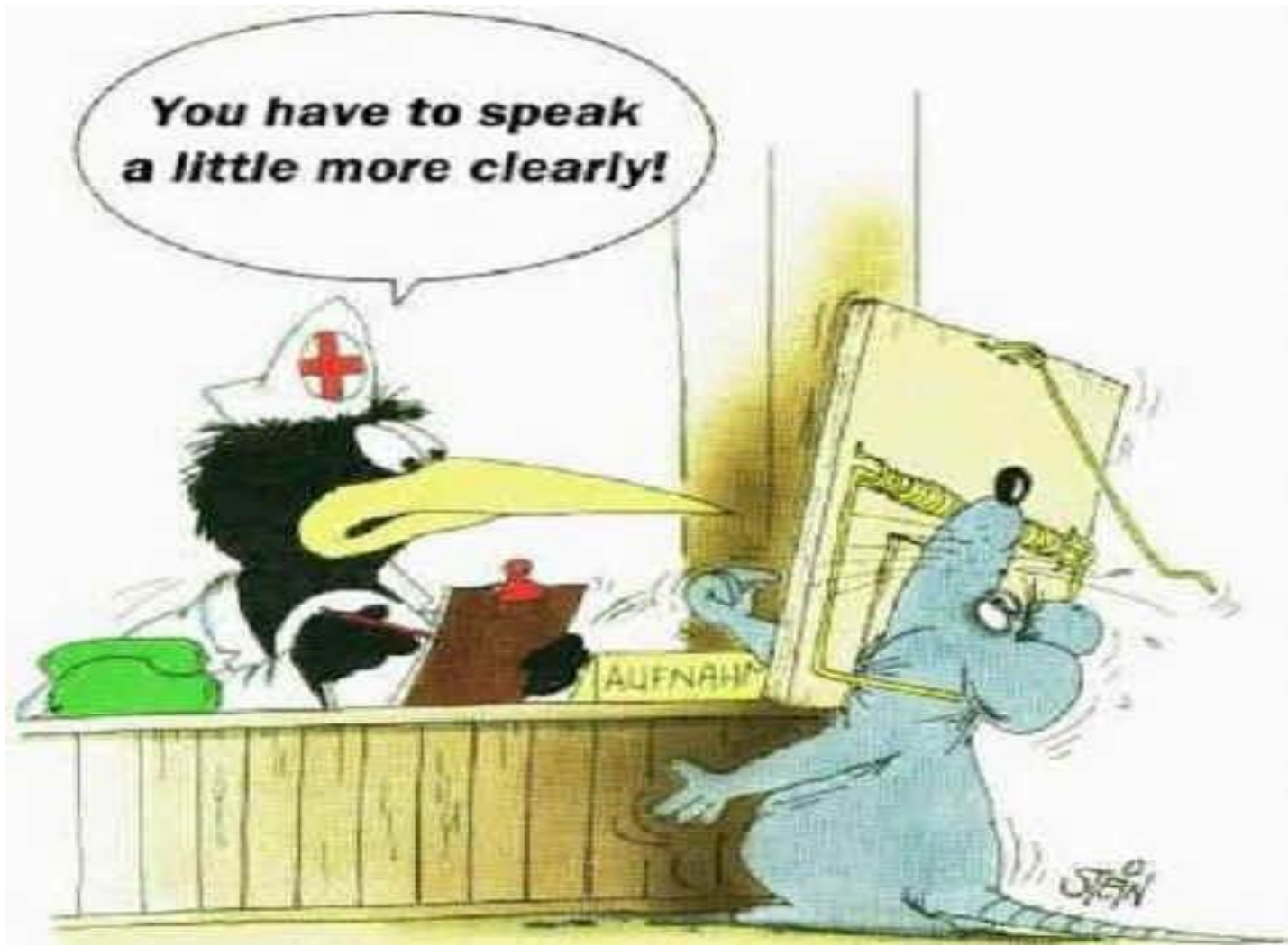
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International Cancer Control Partnership (ICCP)  
Extension for Community Health Outcomes (ECHO) Programme



International Agency for Research on Cancer

# The role of cancer registries



International Agency for Research on Cancer

# National cancer control plans require surveillance and monitoring




- What is the cancer burden in the country?
- How is it likely to evolve? Where to invest?
- How successful are the implemented cancer control policies?

Two cancer surveillance mechanisms available (and complementary):

- For mortality: vital statistics on deaths (by cause)
- For morbidity: disease (**cancer**) registers

# Types of Cancer Registries

Characteristics, purposes and uses of different types of cancer registries

Registry type	Characteristics	Purpose	Can this type of registry be used in formulating cancer plans?
 <b>Hospital-based cancer registry</b>	Collects information on all cases of cancer treated in one or more hospitals	Useful for administrative purposes and for reviewing clinical performance	<b>NO</b>
 <b>Pathology-based cancer registry</b>	Collects information from one or more laboratories on histologically diagnosed cancers	Supports the need for laboratory-based services and serves as a quick "snapshot" of the cancer profile	<b>NO</b>
 <b>Population-based cancer registry</b>	Systematically collects information on all reportable neoplasms occurring in a geographically defined population from multiple sources	The comparison and interpretation of population-based cancer incidence data to support population-based actions aimed at reducing the cancer burden in the community	<b>YES</b>

Source: Bray et al. (2014) Planning and Developing Population-Based Cancer Registration in Low- and Middle-Income Settings. IARC Technical Publication No. 43. Lyon: International Agency for Research on Cancer. Available from: <http://publications.iarc.fr>

# What is a PBCR?

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A Population-Based Cancer Registry (PBCR) is an ongoing surveillance system to collect, store, manage, analyse and disseminate information on the **occurrence of cancer in a defined population.**

Indicator obtained



**Cancer incidence rates by type of cancer for the defined population.**

Source: Piñeros et al. A Global Cancer Surveillance Framework Within Noncommunicable Disease Surveillance: Making the Case for Population-Based Cancer Registries. *Epidemiol Rev.* 2017 Jan 1;39(1):161-169



# Role of PBCR in Cancer Surveillance

## Population-Based Cancer Registry (PBCR)



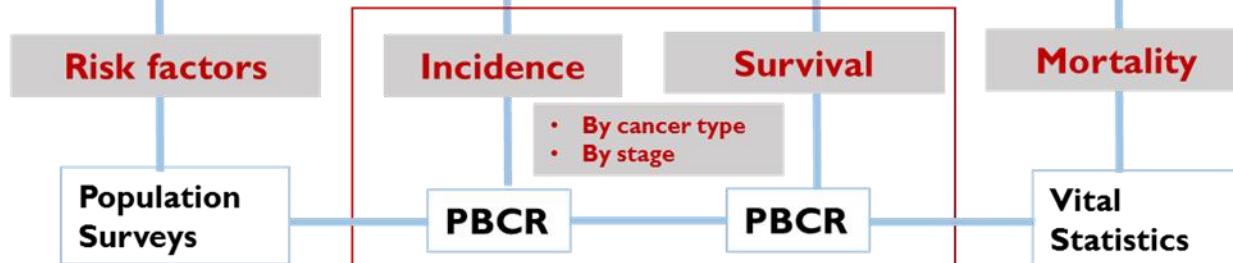
### Cancer Control Measures



### Population



### Basic Surveillance measures



### Surveillance Strategy

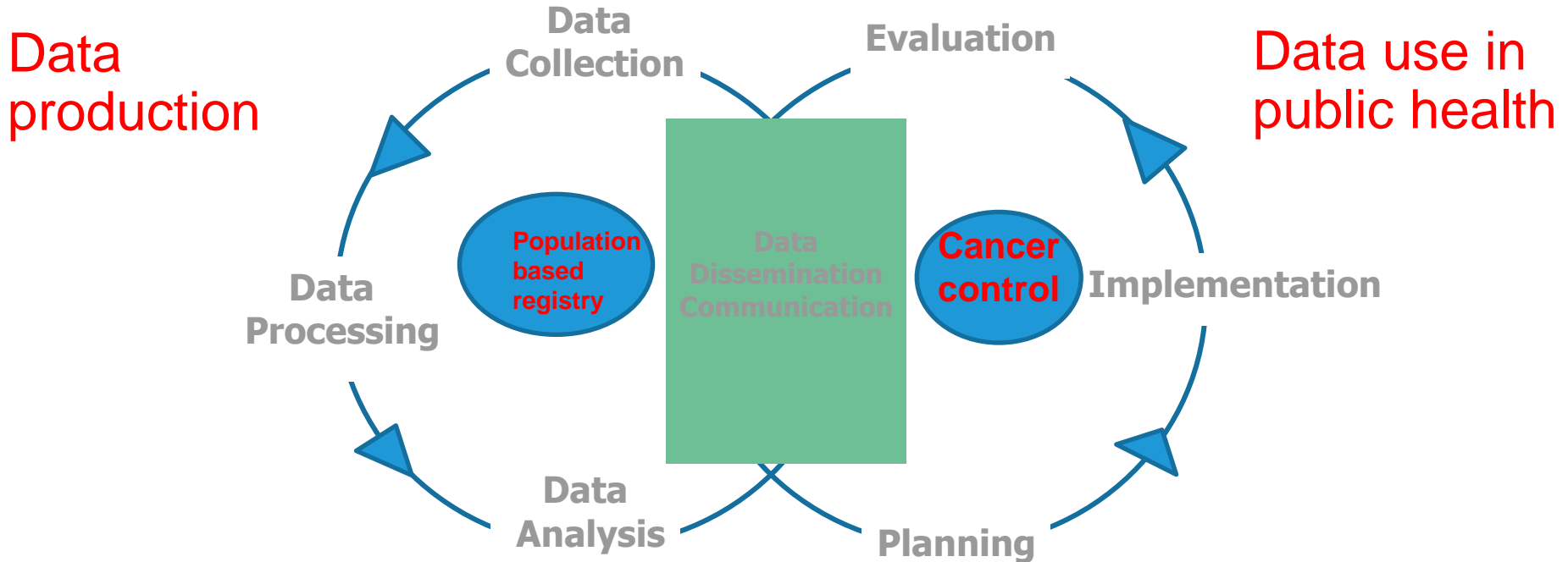
### Extended Surveillance measures



Source: Piñeros et al. A Global Cancer Surveillance Framework Within Noncommunicable Disease Surveillance: Making the Case for Population-Based Cancer Registries. Epidemiol Rev. 2017 Jan 1;39(1):161-169



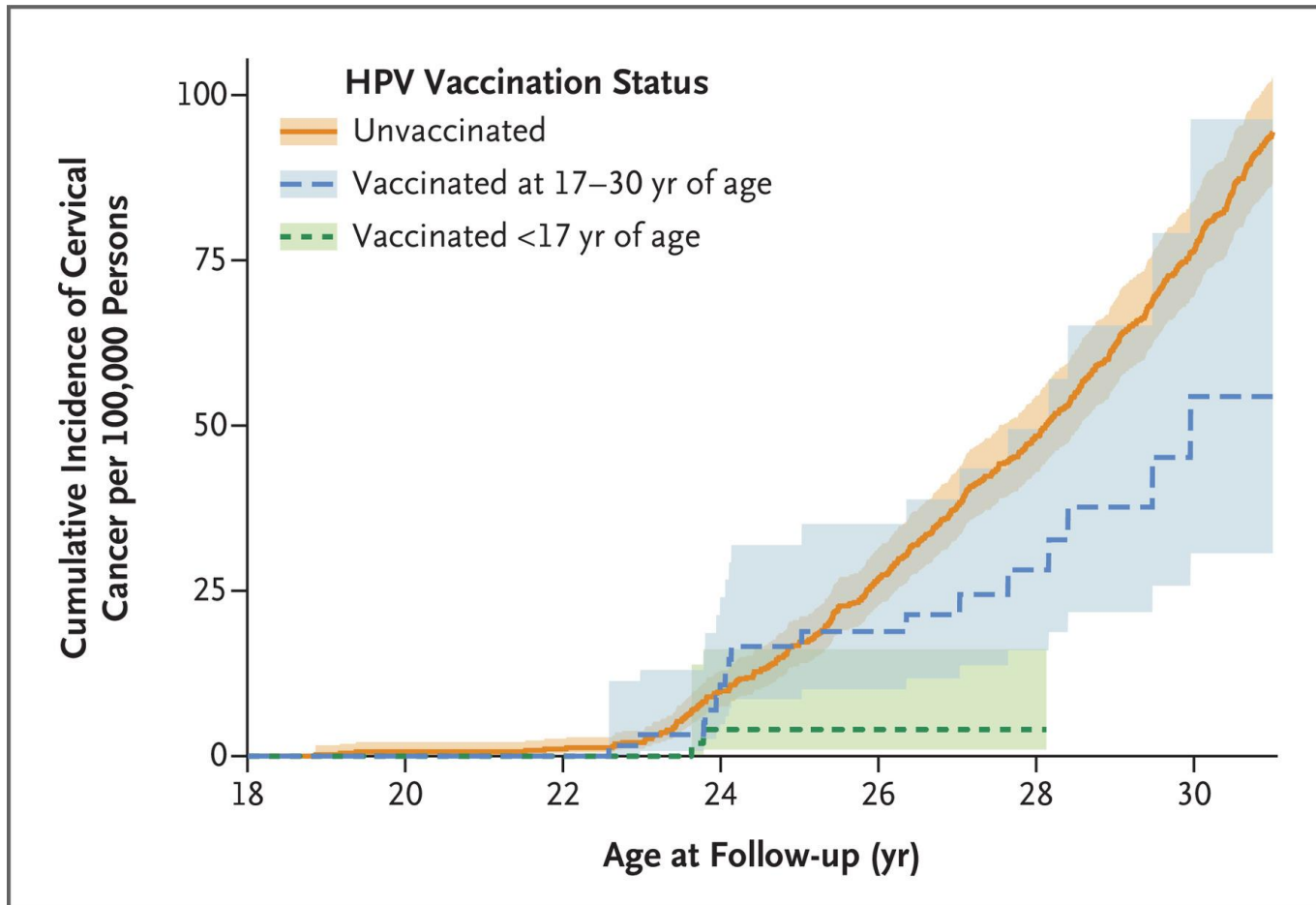
# Surveillance for cancer control



Different stakeholders involved in data production & data use for **cancer control**



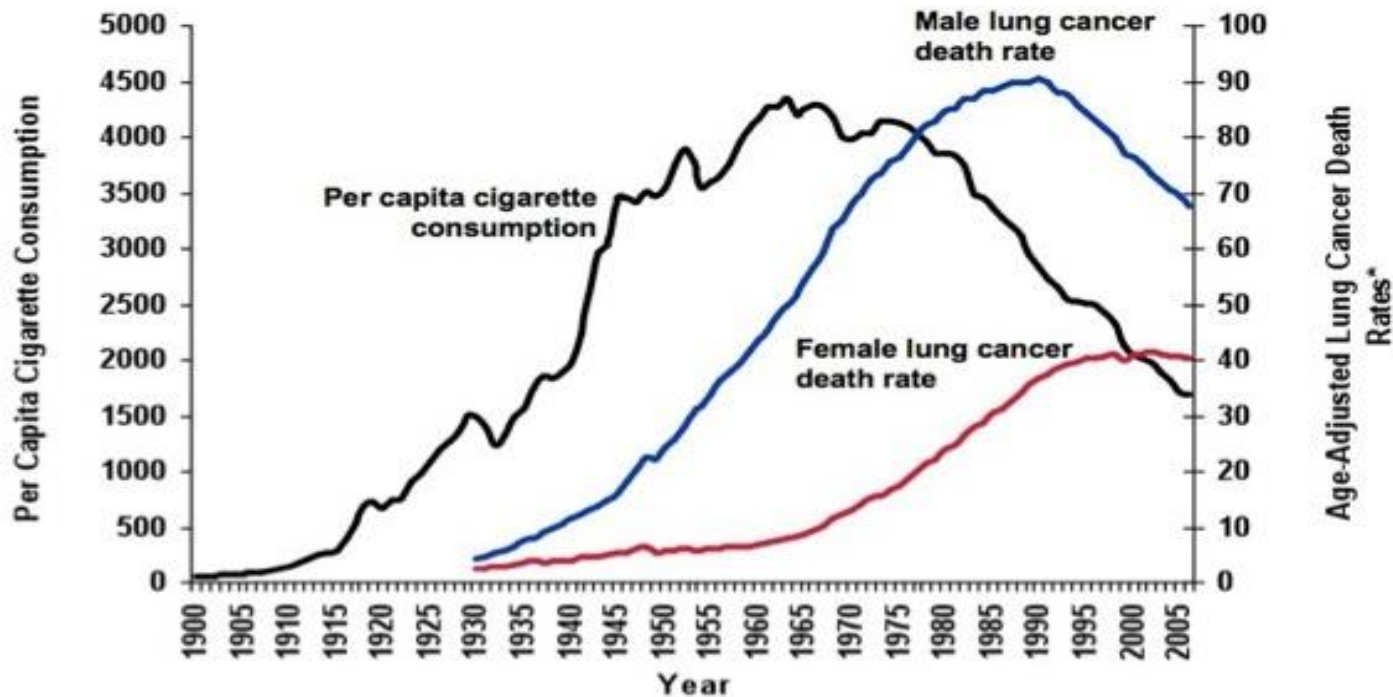
# PBCR data and **Primary prevention**



- Swedish National Cancer Register
- National Vaccination Register

Lei J, Ploner A, Elfström et al. [HPV Vaccination and the Risk of Invasive Cervical Cancer](#). *Engl J Med*. 2020 Oct 1;383(14):1340-1348. doi: 10.1056/NEJMoa1917338

# PBCR and primary prevention



\*Age-adjusted to 2000 US standard population.

Source: Death rates: US Mortality Data, 1960-2006, US Mortality Volumes, 1930-1959, National Center for Health Statistics, Centers for Disease Control and Prevention, 2009. Cigarette consumption: US Department of Agriculture, 1900-2007.

# PBCR to monitor screening programmes

Main criteria to monitor and evaluate screening programmes are

## 1. Outcome measures

- Changes in mortality
- Changes in the **incidence rate of advanced disease**, termed stage migration

## 2. Performance indicators (quality control)

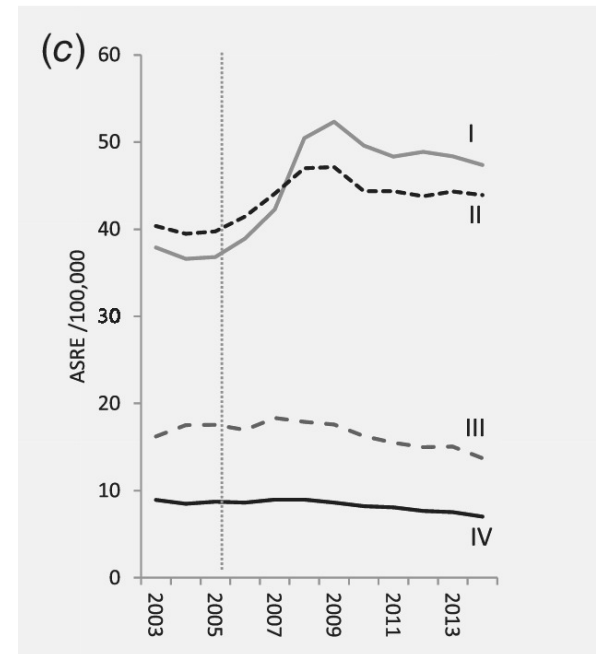
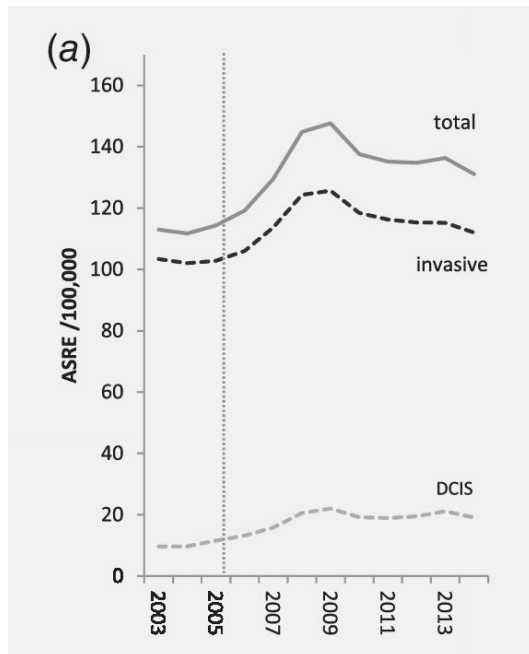
- Rate of **interval cancers**: cancers diagnosed between screening episodes
- Prevalence rate at first screen
- Expected **incidence**

# PBCR in evaluating and monitoring screening programmes – Outcomes (1)

Breast cancer **incidence rates** and implementation of mammography screening in Germany 2003-2014

Changes in invasive carcinoma vs *in situ*

Changes in stage



Information from 16 Federal State PBCR

# Surveillance and cancer control planning, monitoring and evaluation: integration

- Cancer registry advisory committee
  - Multidisciplinary, focus on use of data to inform NCCP
- Linkage with national cancer control committee / plans
  - Joint appointments of members, regular communication
- Reporting and dissemination
  - Consider different formats targeting audience, use of knowledge translation methods for engagement
- Development of targets and indicators
  - May require specific data collection outside of the registry

# Thank you!

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