Cancer control with special attention to CRC – case of Poland

A few epidemiological remarks and reflections

Witold Zatoński
• 1990: Health / premature mortality in Eastern Europe worse than in India, China, etc.

• “Democracy is healthier” (1989-2014); Huge health gain in countries of Eastern part of European Union.

• Huge cancer diversity. Challenges. Overdiagnosis.

• CRC control – we all share the same problems.
In 1990 the chance of a 15 year old boy to reach the age of 60 was lower in Eastern Europe than in India or China.
HEM - research project 2004-2008 (no 2003121)

- **Objective:** To identify and quantify health gap between eastern and western part of European Union and to determine how much of this gap is attributable to different causes of death and risk factors.

- **Eastern part of the EU:** the new EU member states from central and eastern Europe - Bulgaria, Czech Rep., Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia (EU10)

- **Western part of the EU:** the “old EU” – Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, UK (EU15)

The final report is available at the project website: www.hem.waw.pl
Probability of death before 65 years of age, 2010*

East/West health gap is closing ... but we must accelerate...

Democracy is healthier.
Huge health gain in countries of Eastern part of EU in the last 25 years, but ...

The biggest health gain in EU – in Czech Republic and Estonia (halving premature mortality)

* 2009: Belgium, France

Changes in risk of death, 20-64, 1990 vs. 2010

**Men**

- Czech Rep. 
- Slovakia 
- Slovenia 
- Estonia 
- Poland 
- Luxembourg 
- Hungary 
- Ireland 
- Finland 
- Italy 
- Germany 
- EU10 
- Denmark 
- Austria 
- Portugal 
- EU15 
- United Kingdom 
- Spain 
- Netherlands 
- Sweden 
- France 
- Latvia 
- Belgium 
- Greece 
- Romania 
- Bulgaria 
- Lithuania

**Women**

- Estonia 
- Czech Rep. 
- Denmark 
- Hungary 
- Ireland 
- Slovakia 
- Poland 
- Slovenia 
- Luxembourg 
- EU10 
- Portugal 
- Greece 
- Belgium 
- Bulgaria 
- Netherlands 
- France

**Percentage points**

- EU10
- France
- Netherlands
- Bulgaria
- Lithuania

- EU15
- Germany
- Poland
- Austria
- United Kingdom
- Spain
- Sweden
- Finland
- Latvia
- Hungary
- Denmark

- EU10
- France
- Netherlands
- Bulgaria
- Lithuania
Cancers will be the main cause of death in Poland in the next decade

Cardiovascular disease revolution

CVD and cancer mortality*, Poland, 0-64

Cancer became number one cause of premature mortality

* Standardised (based on European Standard Population) mortality rates per 100,000 pop.
Mortality time trends from selected cancers in Poland and in EU

Huge cancer diversity

Importance of molecular diagnosis
Mortality time trends from selected cancers in Poland, 1963-2012

Males

Standardised rates were calculated on the basis of a standard World population.

Total mortality indicators per 100,000 pop.
Poland, 1963-2012

APC – Annual percentage change
Incidence time trends for selected cancers in Poland 1980-2012

- **Males**
  - dramatic decline in male lung cancer
  - dramatic increase in prostate cancer
  - very dramatic increase in breast cancer

- **Females**
  - lung
  - breast
  - colorectal
  - cervical cancer
  - ovary
  - lymphoma
  - stomach
  - urinary bladder

Standardised rates were calculated on the basis of a standard World population
• Do you know which countries are undergoing a thyroid cancer epidemic?
• Do you know which countries are experiencing a thyroid cancer epidemic in the last decade?

• South Korea and... Czech Republic (etc.)

• Can we control this epidemic in the EU?
Korea’s Thyroid-Cancer “Epidemic” — Screening and Overdiagnosis

Hyeong Sik Ahn, M.D., Ph.D., Hyun Jung Kim, M.P.H., Ph.D., and H. Gilbert Welch, M.D., M.P.H.

The Republic of Korea has provided national health insurance to its 50 million citizens since the 1980s. Although health care expenditures in South Korea’s single-payer system are relatively low — accounting for 7.6% of the country’s gross domestic product — the system is technologically intensive; among the countries in the Organization for Economic Cooperation and Development, it ranks second in acute care beds per million population, fifth in computed tomography (CT) scanners per million population, and fourth in magnetic resonance imaging (MRI) machines per million population. The country also has a well-developed data infrastructure for both vital statistics (Statistics Korea) and cancer incidence (Korean Central Cancer Registry).

In 1999, the government initiated a national screening program for cancer and other common diseases. This program now provides screening for breast, cervical, colon, gastric, and hepatic...
Thyroid-Cancer Incidence and Related Mortality in South Korea, 1993–2011.

Data on incidence are from the Cancer Incidence Database, Korean Central Cancer Registry; data on mortality are from the Cause of Death Database, Statistics Korea. All data are age-adjusted to the South Korean standard population.

“The South Korean experience suggests that these countries are seeing just the tip of the thyroid-cancer iceberg – and that if they want to prevent their own 'epidemic', they will need to discourage early thyroid-cancer detection.”

Prostate cancer, 0+

Incidence

Mortality

Stand. Rates per 100,000 pop.

Poland

USA

Stand. rates per 100,000 pop.

Poland

USA

* Standardised rates were calculated on the basis of a standard World population per 100,000 pop.
Stomach cancer mortality in Poland and Austria

Is cancer a civilization disease?

Dramatic stomach cancer decline is probably result of development.
CRC control – we share common problems
“Although central European men in six provinces (all in Czechoslovakia) show mortality rates higher than the highest in any EEC country.”

“Particularly dramatic increases in Czechoslovakia and Hungary have led to both countries along with Austria and West Germany now facing the highest rates of mortality from large bowel cancer not only in Europe but also in the world (Levi et al., 1994).”

Cancer incidence and cancer mortality in US, 1930-2009

Colorectal cancer mortality

**Males, 0+**

- UK
- Poland
- USA

**Females, 0+**

- UK
- Poland
- USA
Czech Republic – in restaurants and hotels we are still exposed to tobacco smoke
Cigarette consumption and smoking in Poland

Tobacco sales in Poland, 1923-2013

Daily smoking by gender, 15+, Poland 1974-2013

The number of smokers

Lung cancer mortality in Poland

Males lung cancer mortality Poland vs. USA, 35-54, 1960-2010

Stand. rates per 100,000 pop.
Lack of consistent alcohol policy in Europe

Decrease in excise taxation of hard spirits

1999 – vodka prices decreased by 44% in Lithuania

2002 – vodka prices decreased by 30% in Poland

2004 – vodka prices decreased by 44% in Finland
Alcohol taxation and premature mortality in Europe

Europe has the highest premature mortality attributable to alcohol in the world.2 Despite WHO’s emphasis on the importance to restrict alcohol consumption with fiscal measures, the Lithuanian (in 1999), Polish (in 2002), and Finnish (in 2004) Governments all lowered excise taxation of alcoholic spirits by 44%, 30%, and 44%, respectively. These decisions led to instant and striking effects on health, which have been described elsewhere for Lithuania3 and Finland.4

Decreases in alcohol prices in Poland provided a so-called one-factor natural experiment—allowing the effects of this factor to be observed—whereby no other reforms in alcohol distribution, availability, or regulation were introduced. Additionally, no changes were noted in other factors that could affect mortality and morbidity in Poland, and the gross-domestic product of this country was steadily increasing. In Poland, reductions in vodka prices were followed by an abrupt increase in recorded alcohol sales from 7 l per capita in 2002 to almost 10 l per capita in 2008, and a yearly increase in mortality rates attributable to alcohol of 6-64 deaths per 100 000 men aged 45-64 years (unpublished). Before alcohol prices were lowered, Poland was one of the countries in Europe with the most dynamic health improvements showing a large and steady decrease in mortality (figure). After the change to alcohol prices, Poland and Finland’s improvements in mortality slowed and Lithuania’s mortality in men worsened. In 2008, alcohol prices were increased again in Poland and the rate of decreasing premature mortality returned to the same levels before 2003 (unpublished).

The Russian Government announced that it would reduce the price of vodka by 16% in February, 2015. Similar to Poland, this decision follows a period of rapid improvements to health. After 50 years of stagnation, the health indicators of the Russian population, especially of young and middle-aged men, have been improving since 2005.5 As with Lithuania, Poland, and Finland, the decision to lower alcohol prices will probably contribute to halting this health transformation in Russia, especially because vodka consumption continues to be a key contributor to its high rates of premature mortality.6

Lithuania, Poland, and Finland increased alcohol taxes a few years after reducing them. We find it difficult to understand why Russia would be willing to repeat the same mistakes as its neighbouring countries rather than learning from them.

We declare no competing interests.

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Figure. Changes in probability of mortality in men aged 20–64 years in Europe. Probability of mortality for men in 1990 versus 2000 and 2002 versus 2007 (S). Probability of a man aged 20 years living to 80 years is expressed as a percentage, and change in probability between the two years is shown in percentage. Data are from 184 Mortality Databases [http://www.mortality.org/].

Smoking prevalence vs. lung cancer mortality and incidence, Poland, men
Smoking prevalence vs. lung cancer mortality and incidence, Poland, women
Mortality time trends for lung cancer

Males, Poland vs Hungary, 20-44

Females, Poland vs Hungary, 20-44