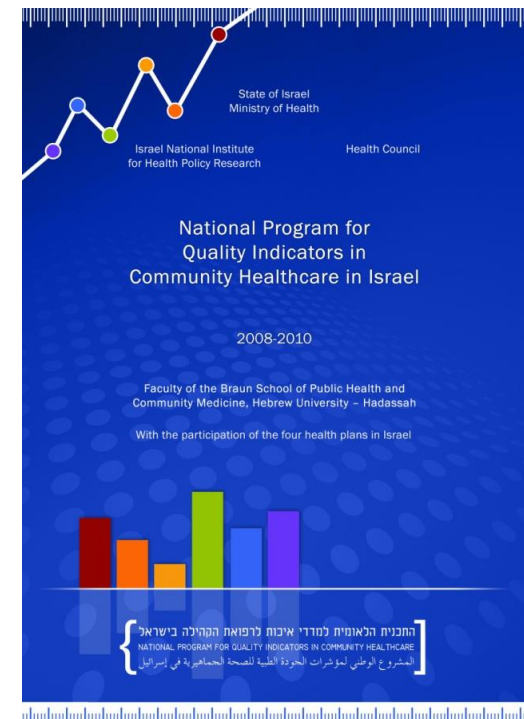# Use of National Quality Indicators to Reduce Under- and Over-diagnosis of Cervical Cancer in Israel

Ora Paltiel, Michal Krieger, Yael Wolf, Vered Kaufman-Shriqui, Ronit Calderon, Orly Manor,

on behalf of the Steering Committee, the National Program for Quality Indicators in Community Healthcare, Israel.

State of Israel
Ministry of Health

Israel National Institute
for Health Policy Research

Health Council

National Program for
Quality Indicators in
Community Healthcare in Israel

2008-2010

Faculty of the Braun School of Public Health and
Community Medicine, Hebrew University – Hadassah

With the participation of the four health plans in Israel

התכנית הלאומית למדדי איכות לרפואה הקהילה בישראל
NATIONAL PROGRAM FOR QUALITY INDICATORS IN COMMUNITY HEALTHCARE
المشروع الوطني لمؤشرات الجودة الطبية للصحة الجماهيرية في إسرائيل

Israel

Population size = 8,680,000

Religious/Ethnic Groups	
Jews	76%
Muslims	20%
Christians/Druze/Other	4%

Social + Health Statistics	
Life expectancy men	**80.9 yrs**
Life expectancy women	**84.5 yrs**
Adult population above age 65 years	**10%**
Health expenditures (% of GDP)	**7.8%**

Ref: Israel CBS

Israel Health Care System

- 4 Health plans (HMOs)

- 1995 National Health Insurance Law- "justice, equity and solidarity…medical services will be offered based on medical considerations, **with reasonable quality**."

- Universal coverage

- "Health Basket" of essential drugs, services and technologies, updated every year

QICH- National Program for Quality Indicators in Community Health Care

○ The National Institute for Health Policy Research (NIHPR) receives designated funds from health tax

○ Mandated "to follow and assess the influence of the law on health services …, **their quality,** efficacy and expenditures."

○ QICH started as a research project funded by NIHPR (Porath & Rabinovitz, 2002)

○ QICH adopted by the Ministry of Health as a national program in 2004, funded by NIHPR.
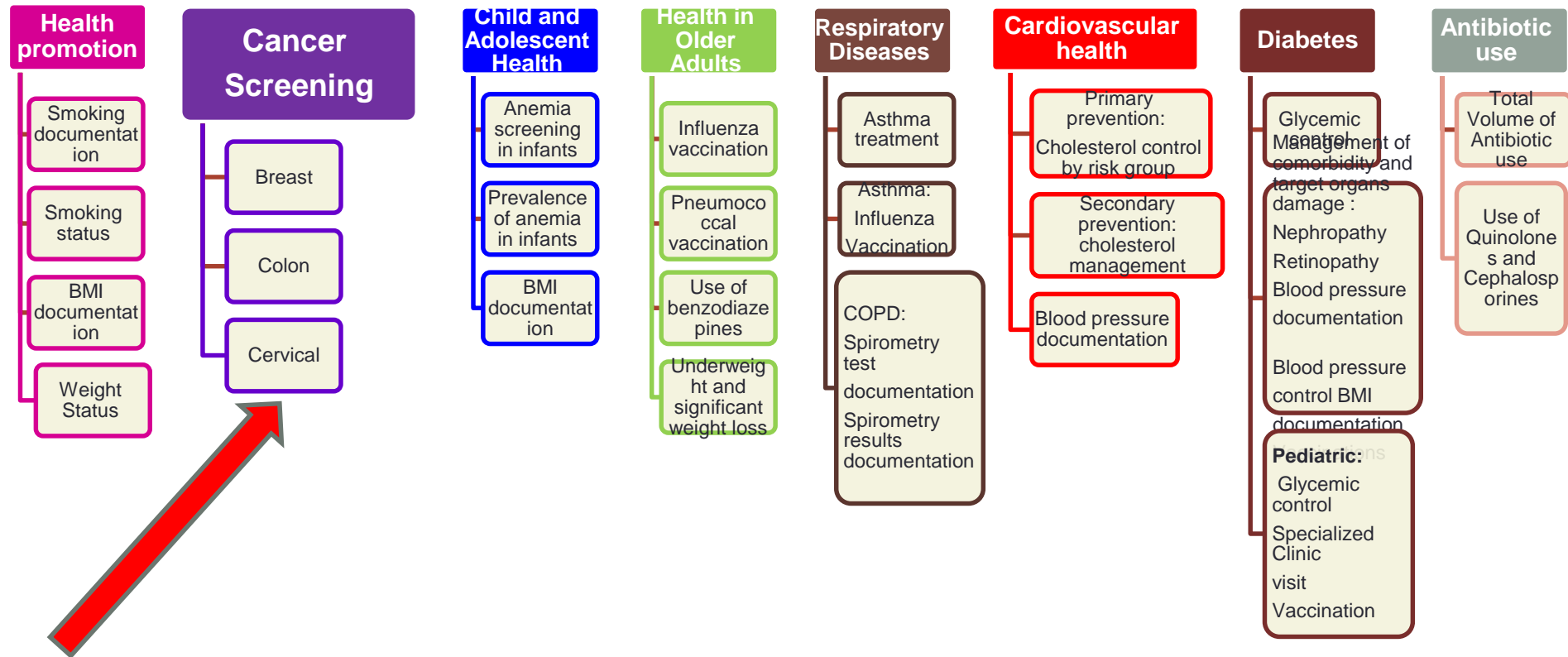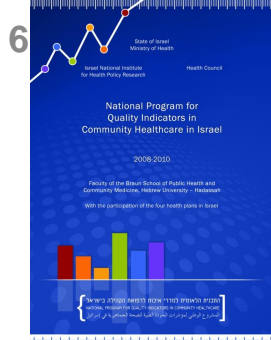
QICH Mission:
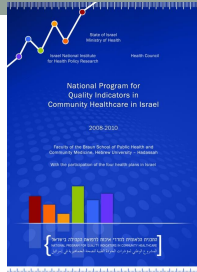
To provide consumers, health professionals and policy-makers with information on the quality of primary care (including preventive services, screening, treatment and management of disease) provided by the four health plans in Israel.

Method:

On-line data from EMR,

via health plans, of **all Israeli permanent civilian population** (100% coverage)

Quality Indicators in QICH
7 Domains

State of Israel
Ministry of Health

Israel National Institute
for Health Policy Research   Health Council

National Program for
Quality Indicators in
Community Healthcare in Israel

2008-2010

Faculty of the Braun School of Public Health and
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With the participation of the four health plans in Israel

Health promotion
- Smoking documentation
- Smoking status
- BMI documentation
- Weight Status

Cancer Screening
- Breast
- Colon
- Cervical

Child and Adolescent Health
- Anemia screening in infants
- Prevalence of anemia in infants
- BMI documentation

Health in Older Adults
- Influenza vaccination
- Pneumococcal vaccination
- Use of benzodiazepines
- Underweight and significant weight loss

Respiratory Diseases
- Asthma treatment
- Asthma: Influenza Vaccination
- COPD: Spirometry test documentation Spirometry results documentation

Cardiovascular health
- Primary prevention: Cholesterol control by risk group
- Secondary prevention: cholesterol management
- Blood pressure documentation

Diabetes
- Glycemic control Management of comorbidity and target organs damage :
- Nephropathy Retinopathy Blood pressure documentation
- Blood pressure control BMI documentation
- **Pediatric:** Glycemic control
- Specialized Clinic visit
- Vaccination

Antibiotic use
- Total Volume of Antibiotic use
- Use of Quinolones and Cephalosporines

USPSTF Cancer Screening Recommendations Adopted in Israel

BREAST CANCER

As of November 2013, the USPSTF recommended*:

Women ages 50–74 have a screening mammography once every two years.

Women younger than 50 should make a decision in concert with their physician about when to start regular screening after taking into account their own personal situation.

CERVICAL CANCER

Women ages 21–29 should have a Pap test every three years.

Women ages 30–65 should have either a Pap test every three years or a Pap test and human papillomavirus (HPV) testing every five years.

COLORECTAL CANCER

As of January 2014, the USPSTF recommended**:

Adults ages 50–75 should be screened through fecal occult blood testing yearly, sigmoidoscopy every 5 years, or colonoscopy every 10 years.

By Ministry of Health Directive
*Active screening program

QICH: Colorectal cancer screening rates, 2003-2014
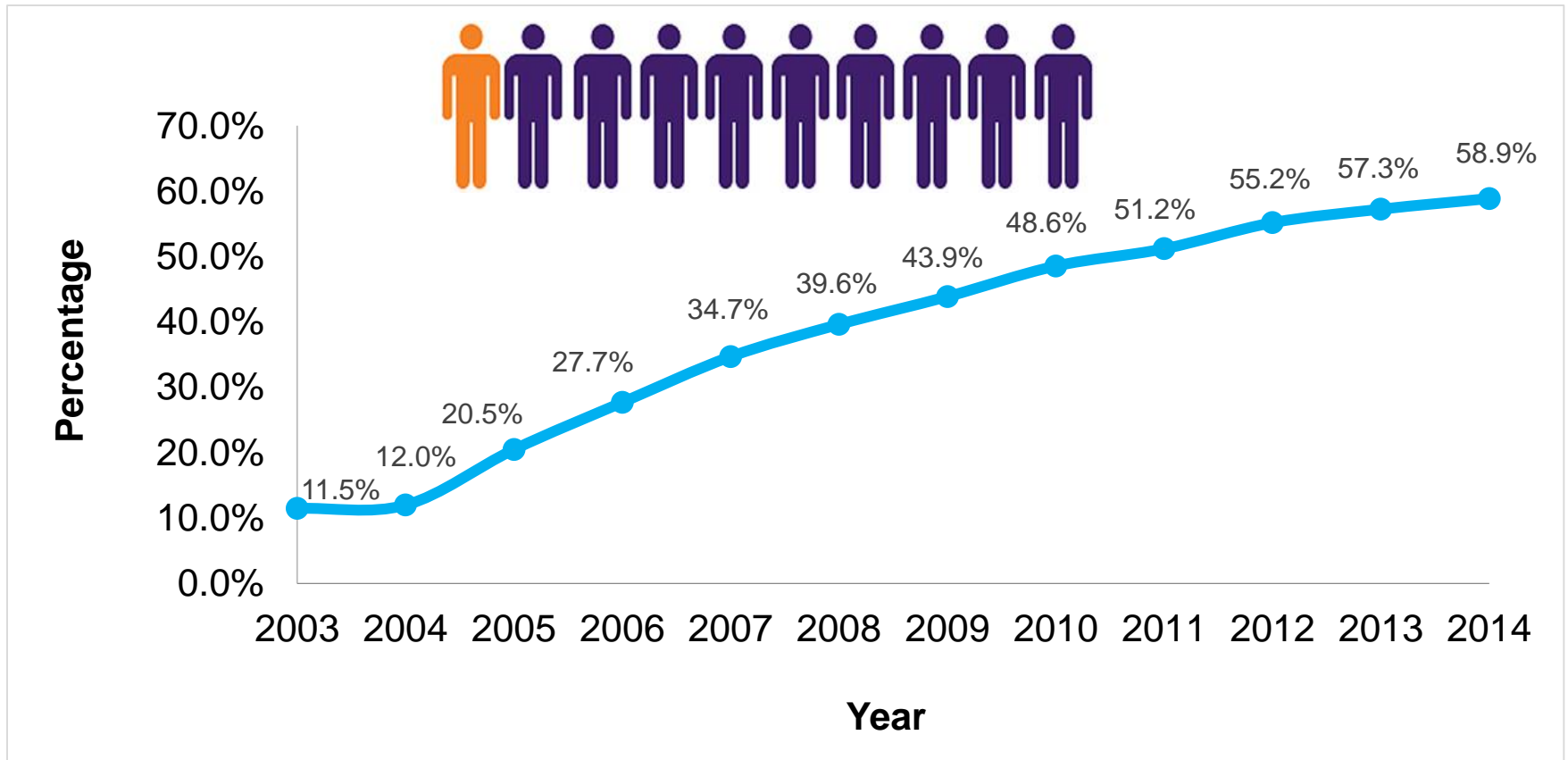
Yearly FOBT or colonoscopy ages 50-74, average
risk (active)

Incidence, 1980-2012
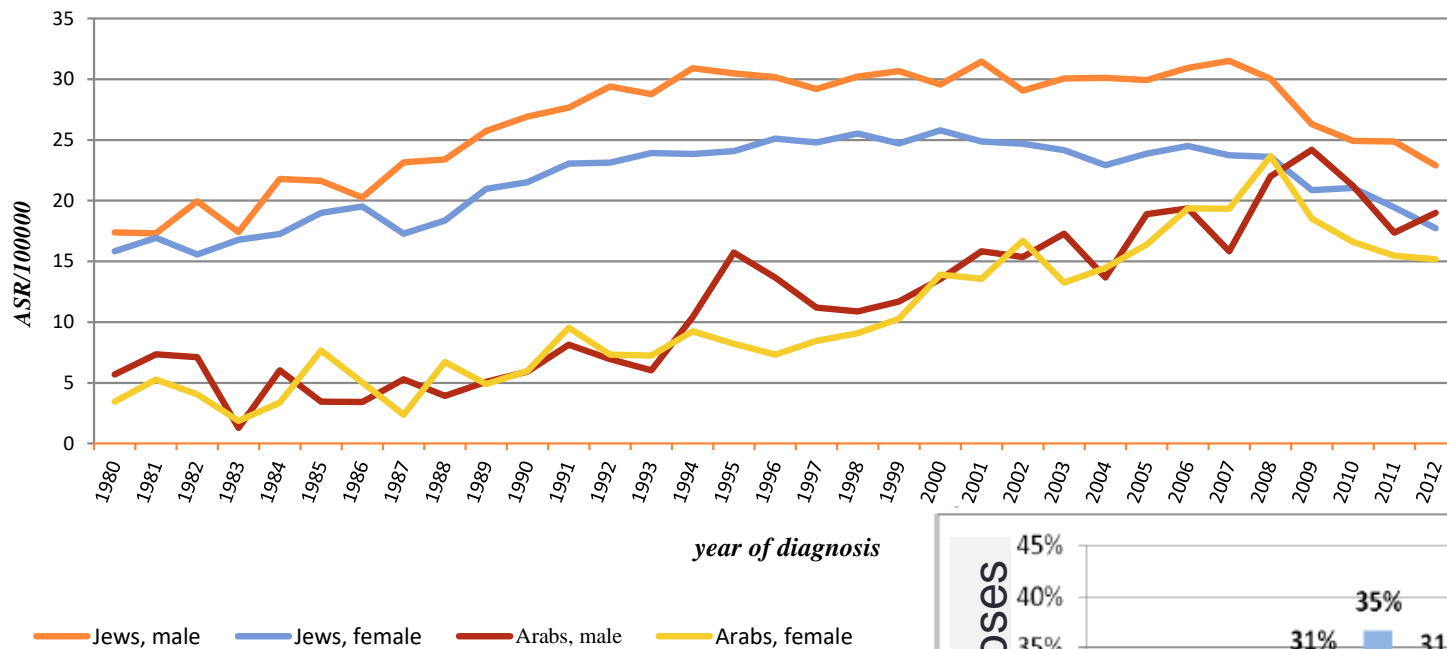
Progress, colon cancer, Israel
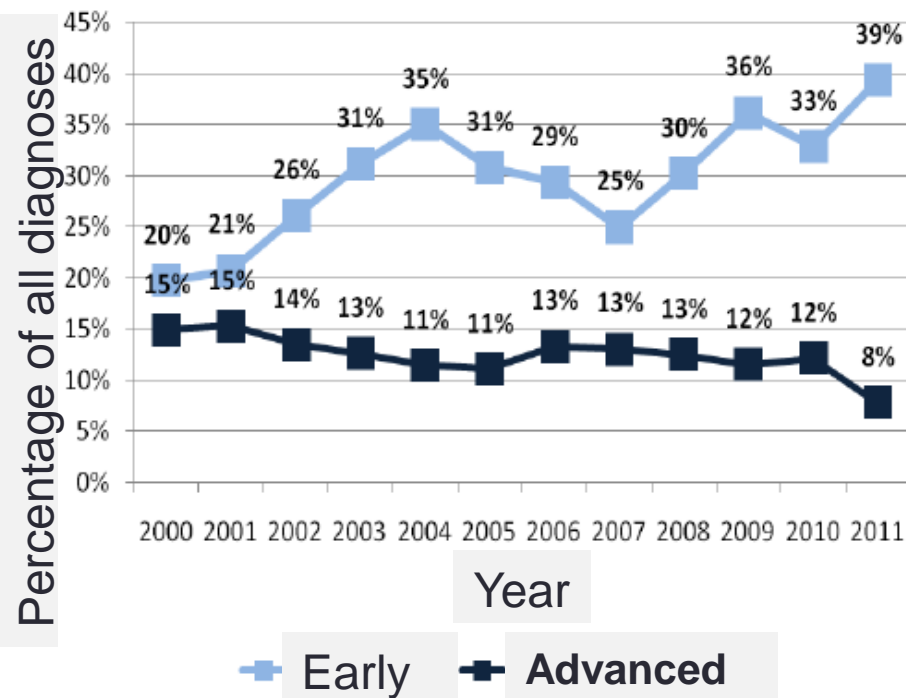
Mammography screening rates, QICH 2003-2014

Women aged 51-74 years who have had at least 1 mammogram in past 2 years(%)

Data points by year:
- 2003: 51.6%
- 2004: 52.5%
- 2005: 55.9%
- 2006: 59.2%
- 2007: 60.7%
- 2008: 64.7%
- 2009: 67.8%
- 2010: 67.9%
- 2011: 66.8%
- 2012: 68.4%
- 2013: 69.9%
- 2014: 69.7%

Y-axis: Percentage
X-axis: Year
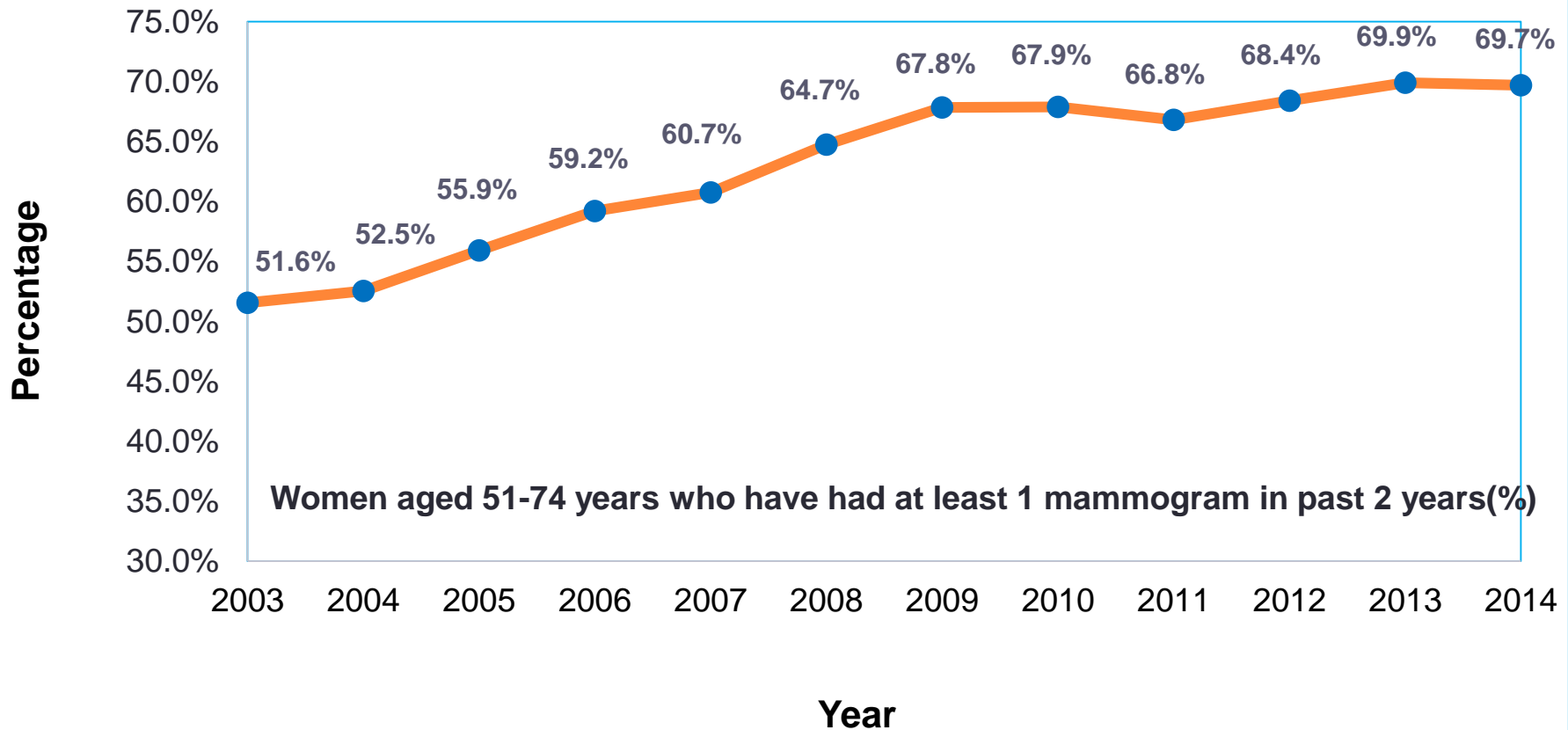
MOH Directive*:
Screening mammography every 2 years by active reaching out to individual women at average risk aged 50-74 years

Decrease in disparities
Mammography screening Israel 2002-2015
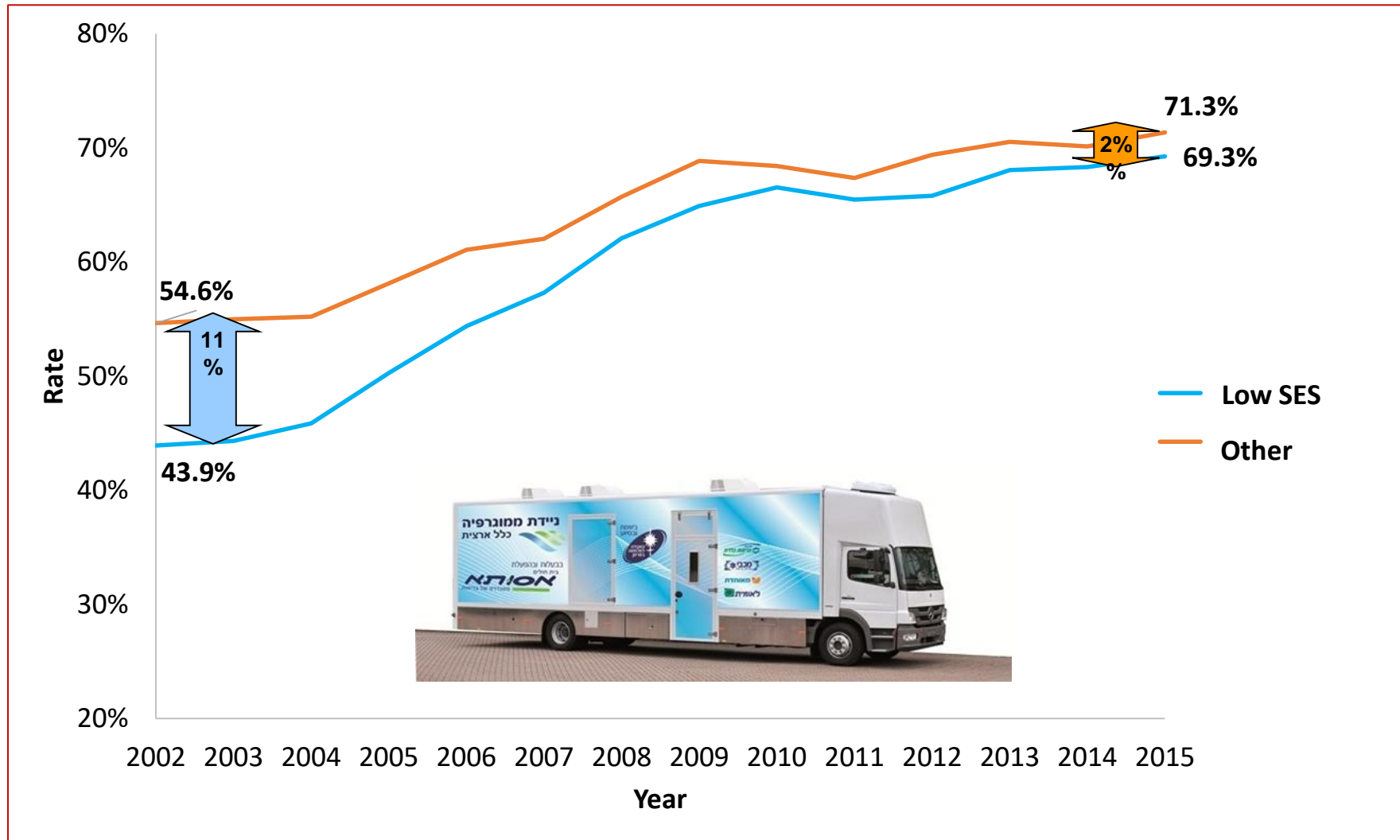
SES= socioeconomic status

Breast cancer mortality in Israel
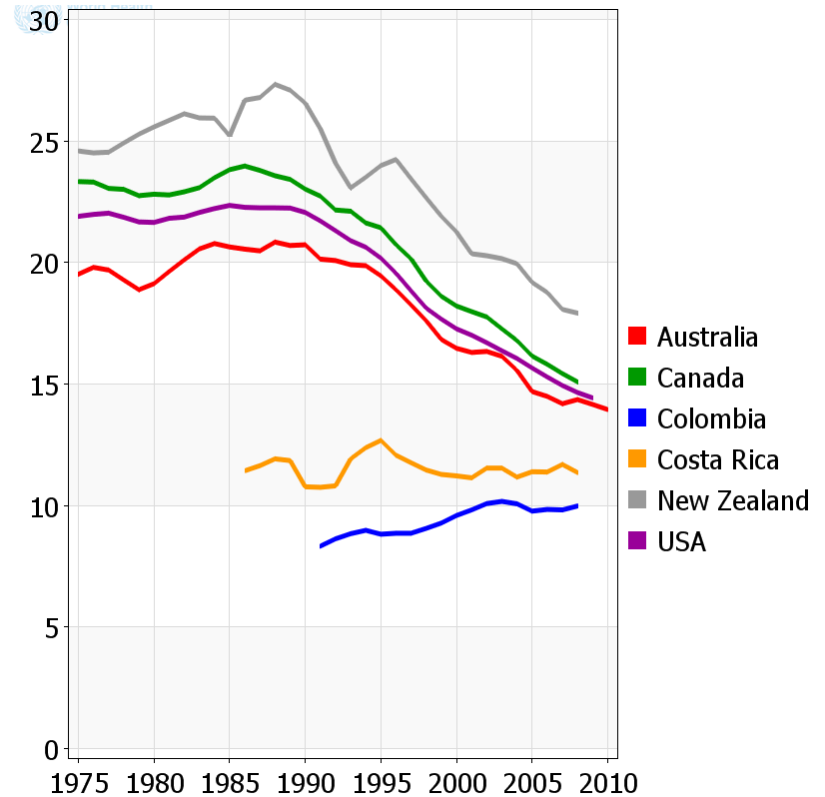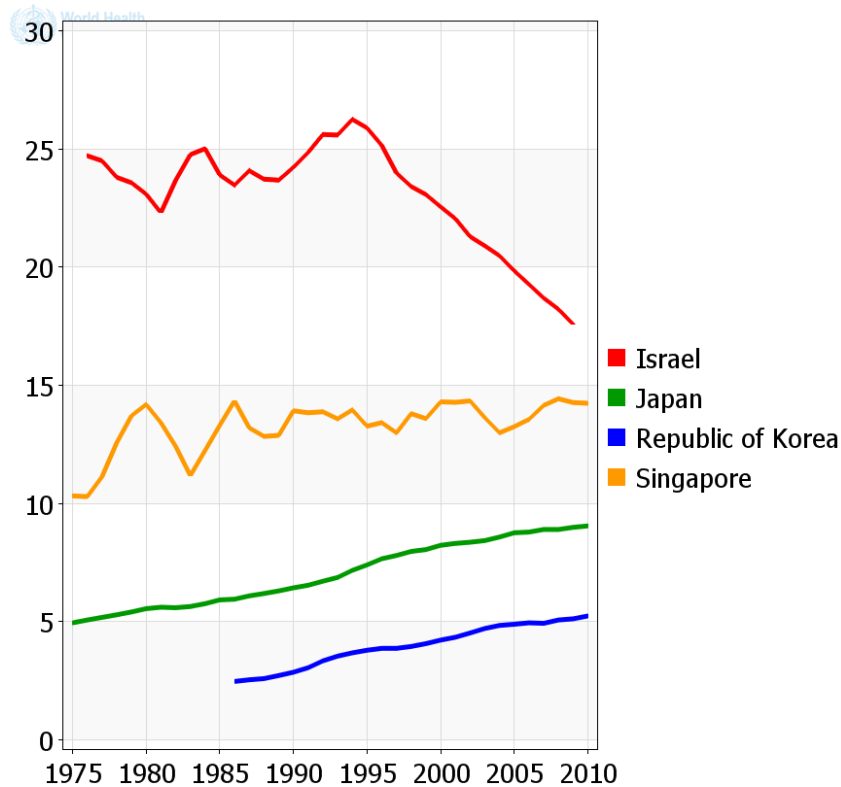
Ref IARC GLOBOCAN 2012

Cervical cancer screening Israel
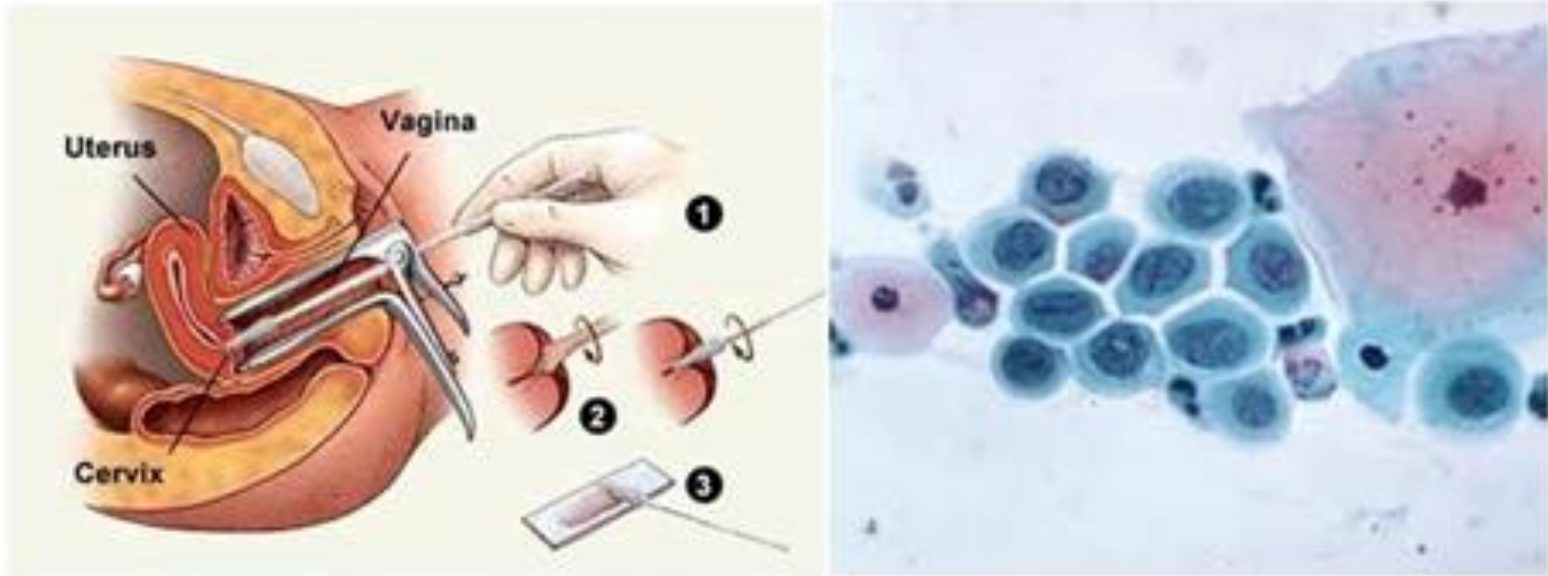
MOH- women aged 25-65 are advised to undergo a routine preventive screening Pap smear- once every three years.

Health Basket Coverage: age 35-54, every 3 years

Primary Prevention- HPV vaccine, covered for girls and boys, 8th grade

Progression of cervical disease after HPV infection

Time · Months · Progression* · Years

Normal epithelium · HPV infection koilocytosis · CIN1 · CIN2 · CIN3 · Invasive carcinoma

Low-grade squamous intraepithelial lesion (ASCUS/LSIL)

High-grade squamous intraepithelial lesion (HSIL)

Regression
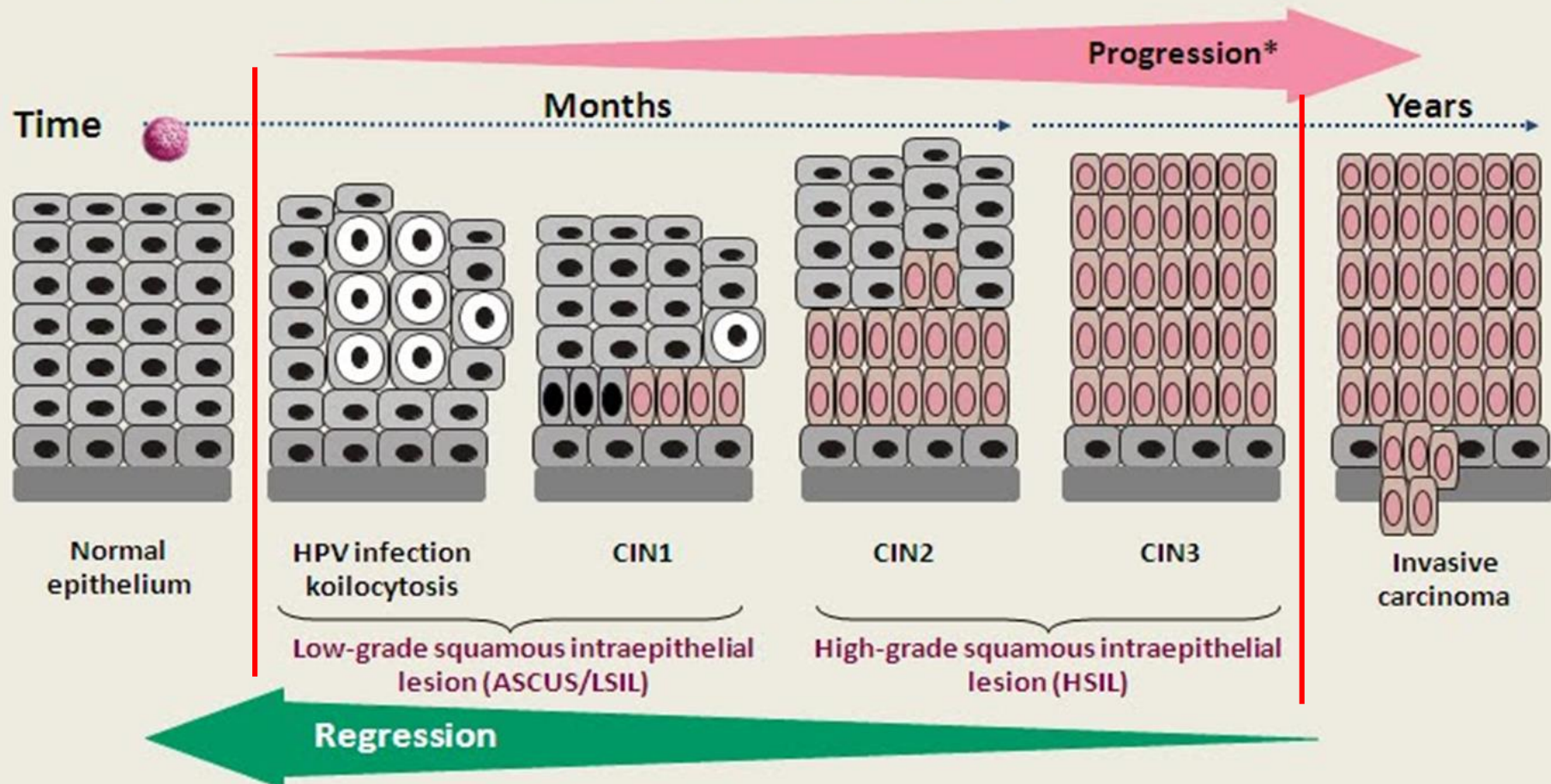
* Probability increases with viral DNA integration. CIN: cervical intraepithelial neoplasia; ASCUS: atypical squamous cells of undetermined significance

Burd EM. *Clin Microbiol Rev* 2003; **16**:1–17; Solomon D, *et al. JAMA* 2002; **287**:2114–2119.

Mortality and Incidence of Cervical Cancer falls when Pap Screening Coverage Increases
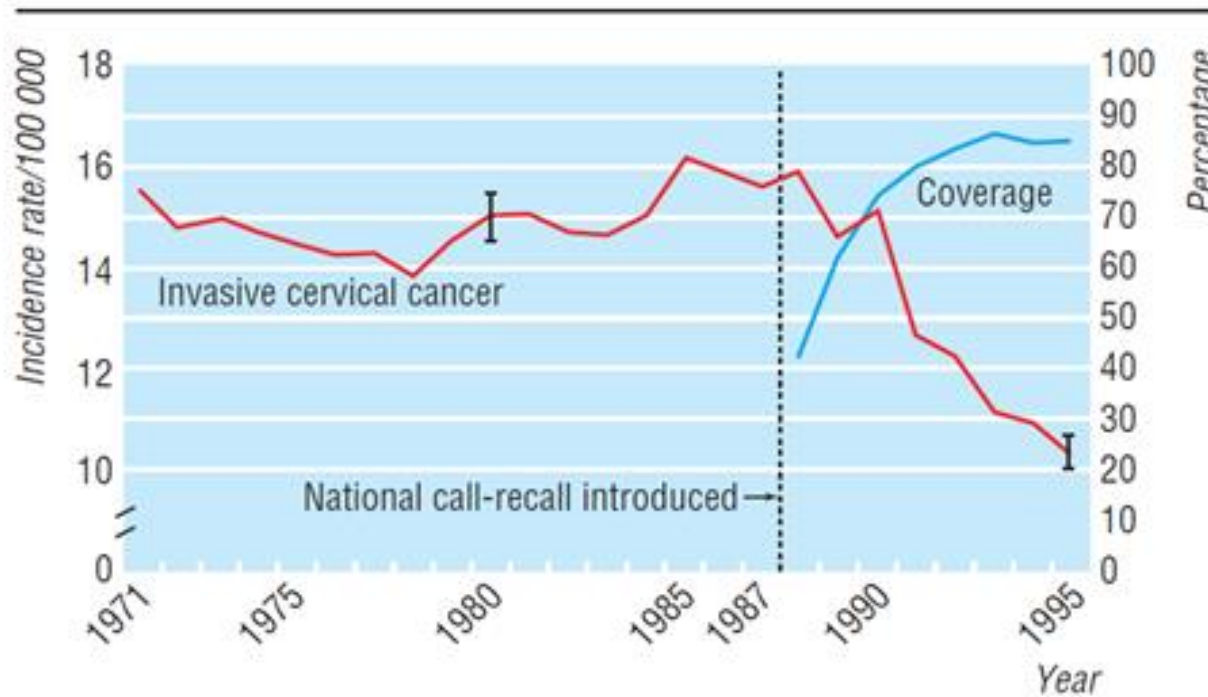
Fig 2 Age standardised incidence of invasive cervical cancer and coverage of screening, England, 1971-95

No woman should die of cervical cancer.

Screening leads to fewer deaths.

More than 50% of all new cervical cancers are in women who have never been screened, or have not been screened in the last five years.

We can do better.

Burden of disease- Israel
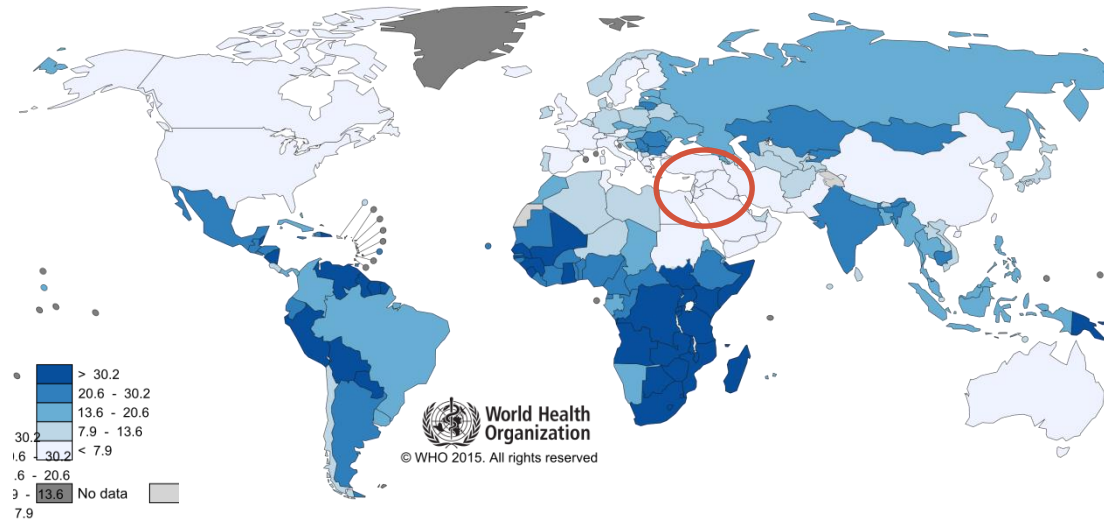
Invasive cancer
- 231 new diagnoses/yr
- 80 deaths/yr

Cervical Cancer Uteri (Invasive Tumors), 1980-2013

ASR/10000

— Jews, female   — Arabs, female
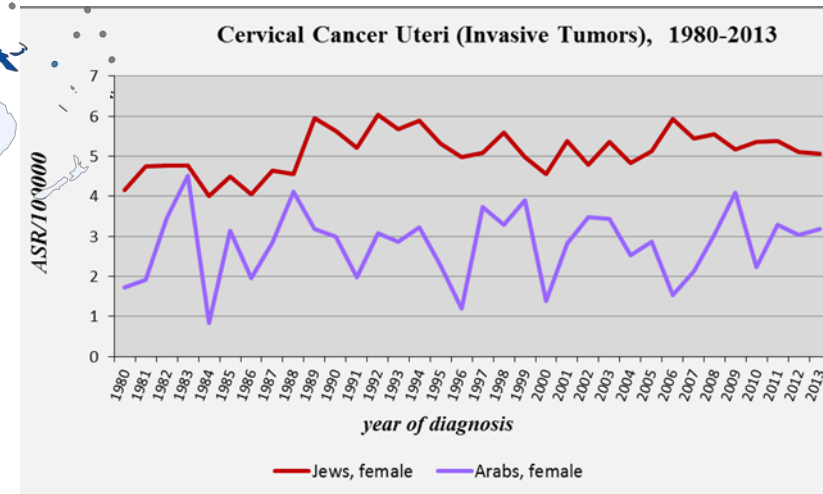
Cervical Cancer (In Situ Tumors), 1980-2013

ASR/100000

year of diagnosis

— Jews, female   — Arabs, female
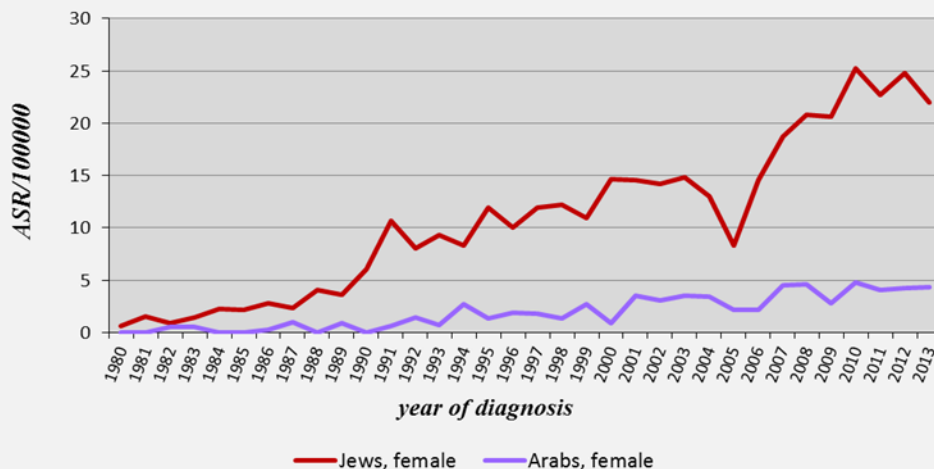
CINIII
- >700 per year.
- Increasing incidence especially in Jewish population
- Peak age 30-39

OECD mortality rates decreasing

2001   2011

Age-standardised rates per 100 000 women

Italy, Switzerland, Finland, Iceland*, Australia, Canada, Netherlands, France, New Zealand, Denmark, Israel, Luxembourg, Spain, United States, Greece, Norway, Sweden, United Kingdom, Austria, Germany, Belgium, Japan, Slovenia, OECD33, Portugal, Korea, Ireland, Czech Rep., Hungary, Slovak Rep., Brazil, Russian Fed., Poland, Estonia, Chile, Mexico

Three-year average.
Source: OECD Health Statistics 2013, http://dx.doi.org/10.1787/health-data-en.

StatLink http://dx.doi.org/10.1787/888932918187

Mortality from cervical cancer, per 100000, Israel

Age standardized rates per 100000

1991   2011

Jews: 1.25, 1.43
Arabs: 0.82, 1

Israel slight 20-year increase

Even in Canada, Cervical cancer deaths highest among the poor: despite universal health insurance


Q1 =
nei...
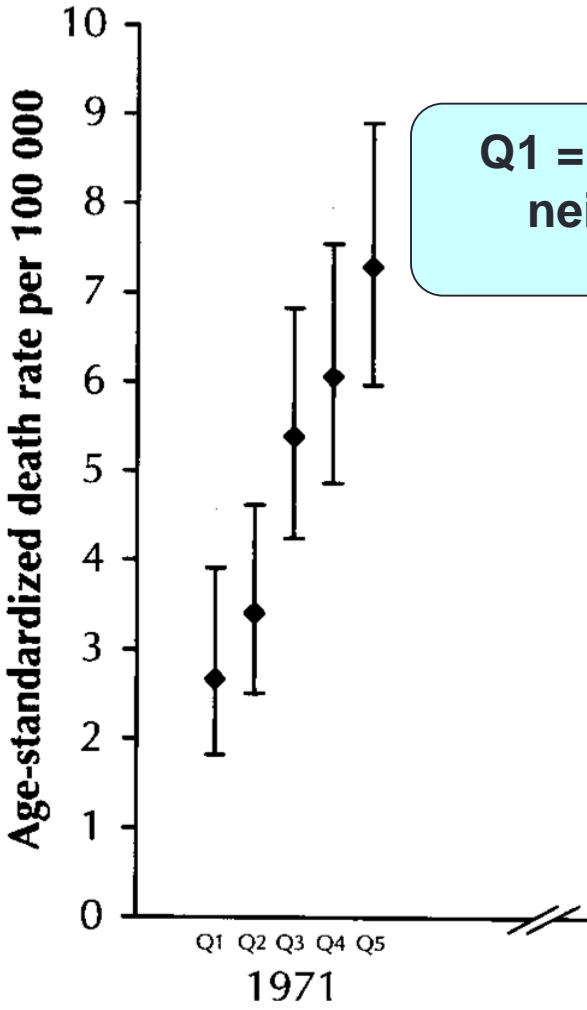
THE INVERSE CARE LAW

JULIAN TUDOR HART

Glyncorrwg Health Centre, Port Talbot, Glamorgan, Wales

Summary The availability of good medical care tends to vary inversely with the need for it in the population served. This inverse care law operates more completely where medical care is most exposed to market forces, and less so where such exposure is reduced. The market distribution of medical care is a primitive and historically outdated social form, and any return to it would further exaggerate the maldistribution of medical resources.

Ng CMAJ 2004;170:1545
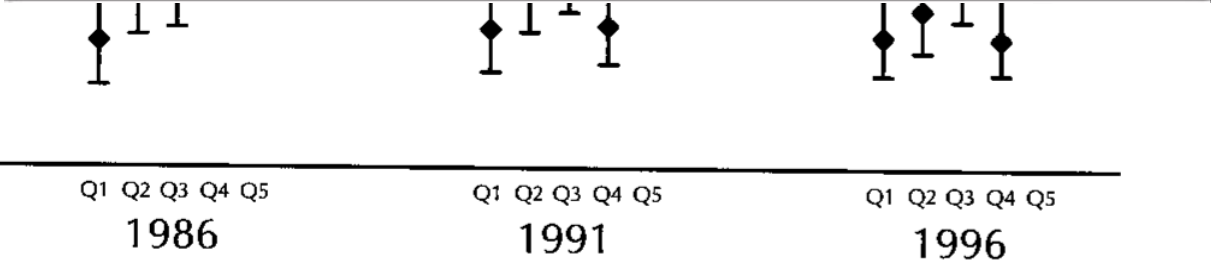
New QICH Cervical Screening Indicators

- Proportion of women aged 35-54 who were screened for cervical cancer in the last 3 years.

  Standard of care

- Proportion of women aged 35-54 who were not screened for cervical cancer in the last 5 years

  Improving health of underserved and high risk women

- Proportion of women who were over-screened for cervical cancer
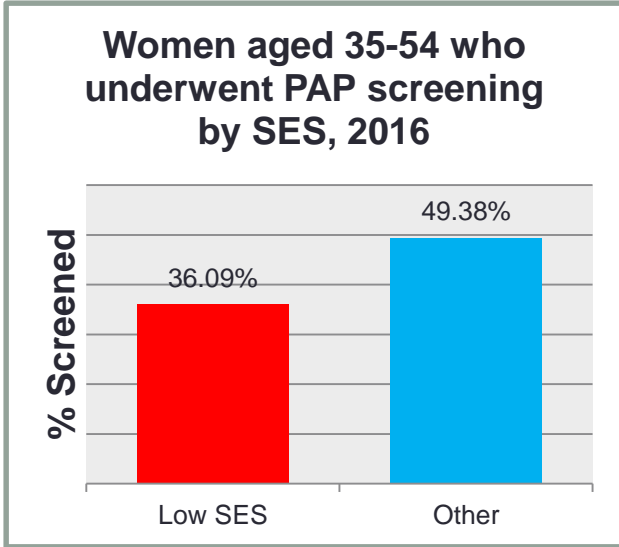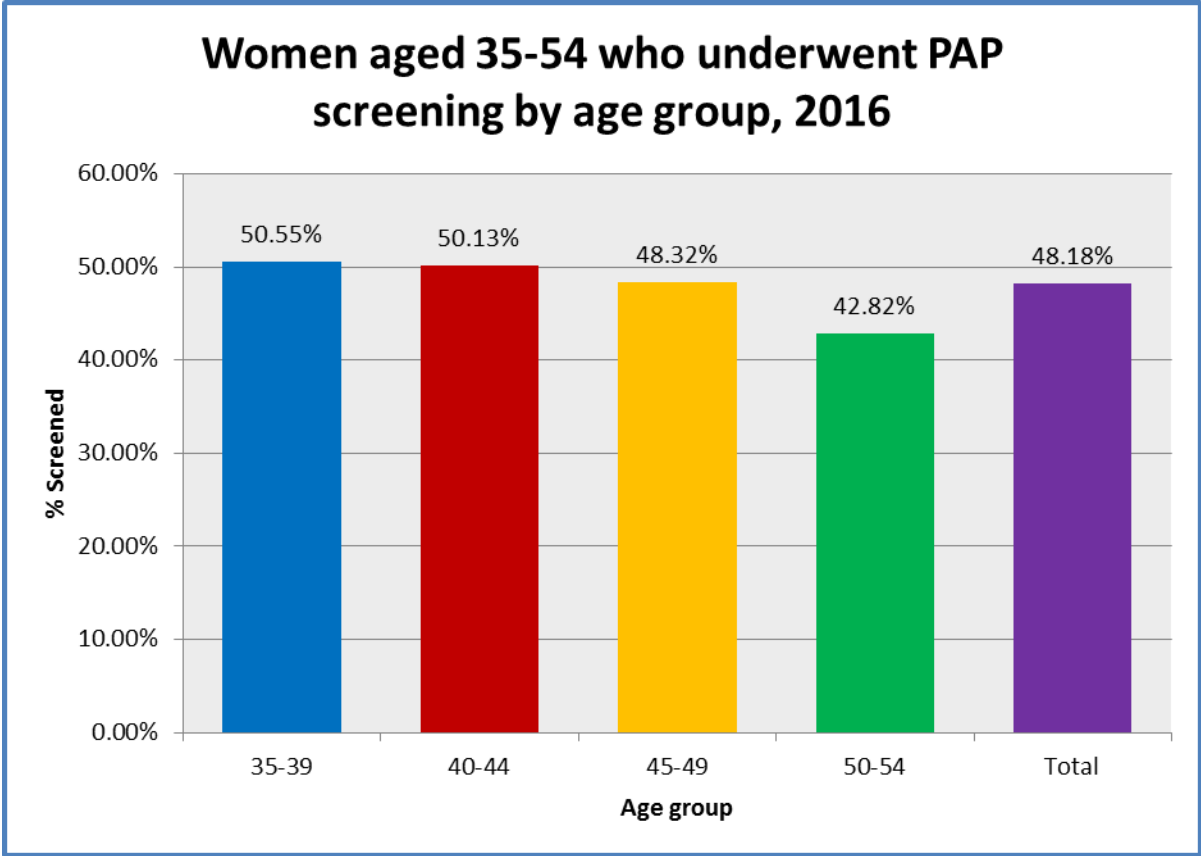
  (> 1 Screening Pap smear in past 3 years)

  Preventing Over- screening

No woman should die of cervical cancer.

Screening leads to fewer deaths.

More than 50% of all new cervical cancers are in women who have never been screened, or have not been screened in the last five years.

Results: Indicator 1- Standard of Care

Women aged 35-54 who underwent PAP screening by age group, 2016

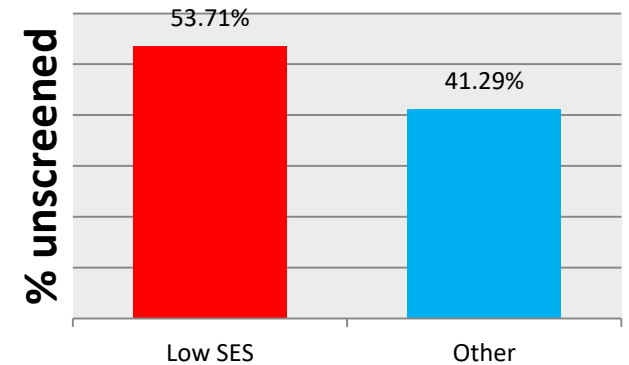Women aged 35-54 who underwent PAP screening by SES, 2016

Indicator 2: Underdiagnosis

Women aged 35-54 who never underwent PAP screening in the last 5 years, by age group, 2016
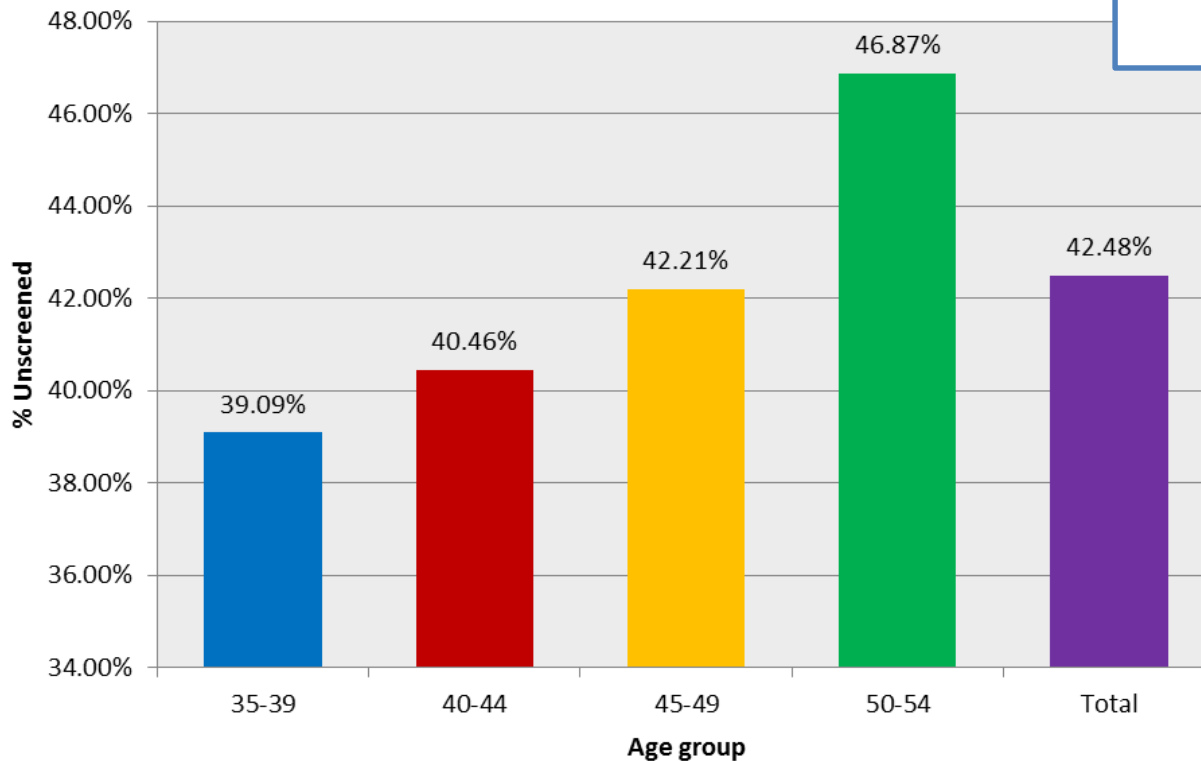
Women aged 35-54 who never underwent PAP screening in the last 5 years, by SES, 2016

Indicator 3: Overdiagnosis:
Proportion of women having >1 Pap Screen within 3 yrs:

- Among women screened
- Excluding "recall" within one month
- 17.5-21% (preliminary)
- Higher rates ages 30-34, higher SES

Women having >1 PAP screen within 3 years

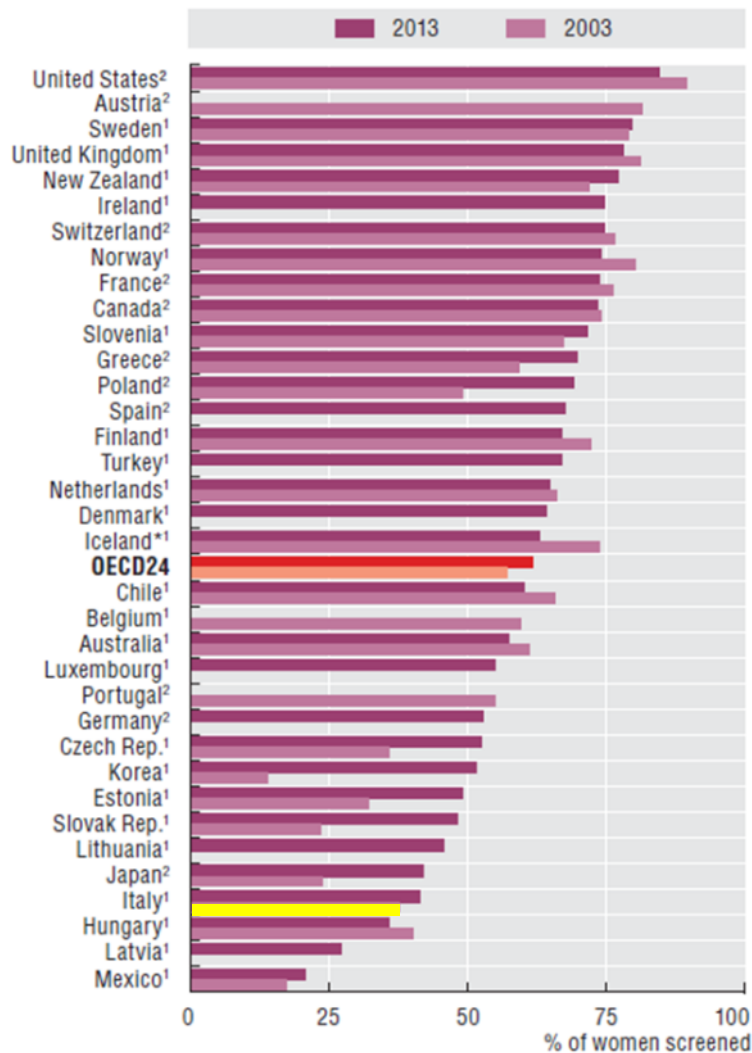15.73% — Low SES
17.70% — Other
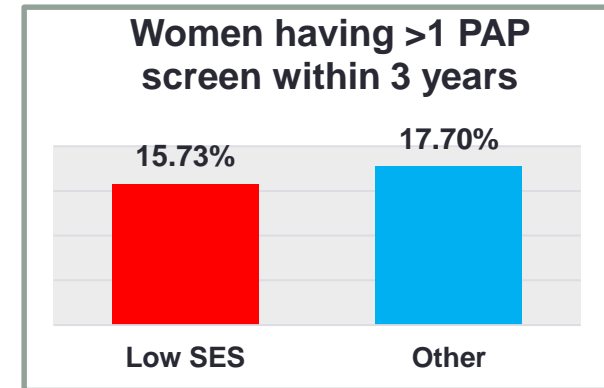
Consequences of overscreening:
- Overtreatment of lesions likely to regress
- Changes in cervix: scarring, pain, cervical stenosis, incompetence, preterm birth

8.25. Cervical cancer screening in women aged 20-69, 2003 to 2013 (or nearest years)

1. Programme. 2. Survey. * Three-year average.
Source: OECD Health Statistics 2015, http://dx.doi.org/10.1787/health-data-en.
StatLink http://dx.doi.org/10.1787/888933281196

Israel 2013

Summary

- Proportion of women screened in Israel below OECD average (at UK level before drop in incidence)

- About 50% of women not screened at all! Higher among older and low SES

- Over-screening in up to 1/5, esp. younger and higher SES

- **QICH has potential to encourage appropriate screening, diminish under-diagnosis and discourage/decrease over-diagnosis, reduce disparities**