Effects of the Affordable Care Act on Access to Care and Cancer Prevention and Outcomes in the United States

Ahmedin Jemal, DVM, PhD

World Cancer Congress
Kuala Lumpur, Malaysia
October 2, 2018
Sources of health care coverage in the United States

- Private (largely employer-based)
- Public
  - Medicare (≥65 years old)
  - Medicaid (poor individuals ≤65 years)
- Uninsured (50 million individuals in 2010)
Affordable Care Act (ACA)

- Dependent coverage expansion
- Elimination of cost-sharing for preventive services

March 2010
Signed into law

January 1, 2014

State Medicaid Expansion Status

- Expanded Jan 1, 2014 (25)
- Since expanded (9)
- Not expanded (17)

Health Insurance Marketplace
Study population

- Women with first primary invasive cervical cancer
- Diagnosed in 2007-2009 (pre-DCE) and 2011-2012 (post-DCE) periods
- Age 21-25 (DCE-eligible) and age 26-34 (DCE-ineligible)
- National Cancer Database, covers 70% of all US cases

Outcomes

- Early stage (I/II)
- Receipt of fertility-sparing treatment (conization and cervicectomy)
Changes in early-stage diagnosis and fertility-sparing treatment for cervical cancer in women age 21-25 years versus 26-34 years

% Stage I/II

% Fertility-Sparing Treatment

Source: Robbins et al. 2015
Rise in Early Cervical Cancer Detection Is Linked to Affordable Care Act

By SABRINA TAVERNISE  NOV. 24, 2015

Shocking: Obamacare Linked to Early Cervical Cancer Detection in Young Women

More early cervical cancer cases being detected under Affordable Care Act

New study finds higher rates of young women covered by parents’ private insurance being diagnosed, treated earlier

Nov. 24, 2015 | By Diane Mapes / Fred Huch News Service
Objective

Changes in up-to-date CRC and female breast cancer screening between 2008 (pre-ACA) and 2013 (post-ACA) in privately and Medicare insured adults by income using the National Health interview Survey

Study participants

- CRC screening: 15,786 men and women age 50-75
- BC screening: 14,530 women age ≥40 years
Changes in Insurance Coverage and Stage at Diagnosis Among Nonelderly Patients With Cancer After the Affordable Care Act

Ahmedin Jemal, Chun Chieh Lin, Amy J. Davidoff, and Xuesong Han

Abstract

Purpose
To examine change in the percent uninsured and early-stage diagnosis among nonelderly patients with newly diagnosed cancer after the Affordable Care Act (ACA).

Patients and Methods
By using the National Cancer Data Base, we estimated absolute change (APC) and relative change in percent uninsured among patients with newly diagnosed cancer age 18 to 64 years between 2011 to the third quarter of 2013 (pre-ACA implementation) and the second to fourth quarter of 2014 (post-ACA) in Medicaid expansion and nonexpansion states by family income level. We also examined demographics-adjusted difference in differences in APC between Medicaid expansion and non-

*Expansion states were defined as those that expanded by January 1, 2014
Trends in quarterly percent uninsured among nonelderly cancer patients by income and Medicaid expansion status, 2013-2014

Source: Jemal et al. JCO, 2017
Proportion of stage I disease for select cancers in 2013 and 2014 in Medicaid-expansion states

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>2013 Q1-Q3</th>
<th>2014 Q2-Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorectal cancer</td>
<td>22.8</td>
<td>21.7</td>
</tr>
<tr>
<td>Lung cancer</td>
<td>18.0</td>
<td>16.6</td>
</tr>
<tr>
<td>Female breast cancer</td>
<td>49.0</td>
<td>47.5</td>
</tr>
<tr>
<td>Cervical cancer</td>
<td>49.0</td>
<td>48.5</td>
</tr>
<tr>
<td>Prostate cancer</td>
<td>17.0</td>
<td>18.5</td>
</tr>
<tr>
<td>Thyroid</td>
<td>74.4</td>
<td>74.7</td>
</tr>
<tr>
<td>Melanoma</td>
<td>68.3</td>
<td>66.4</td>
</tr>
</tbody>
</table>
Changes in proportion of stage I disease (2014 vs 2013) in expansion states

Source: Jemal et al. JCO, 2017
Changes in proportion of stage I disease (2014 vs 2013) in non-expansion states

Source: Jemal et al. JCO, 2017
Conclusions

• The Affordable Care Act has improved access to care and cancer prevention and outcomes

• Reinforce the need for expansion of Medicaid for low-income people regardless of their residence

• Future studies should monitor the effects of the ACA on diminishing socioeconomic disparity in cancer mortality
Q&A

ajemal@cancer.org
Changes in insurance coverage in ages 19-25 years following expansion of dependent coverage, 2008-2012

![Chart showing changes in insurance coverage between 2008 and 2012.]

1Significant linear trend from January–June 2008 through July–December 2010 (p < 0.05).
2Significant linear trend from July–December 2010 through July–December 2012 (p < 0.05).

NOTE: Data are based on household interviews of a sample of the civilian noninstitutionalized population.

From: **Association Between the Affordable Care Act Dependent Coverage Expansion and Cervical Cancer Stage and Treatment in Young Women**

Changes in percent uninsured by race/ethnicity among newly diagnosed cancer patients following the ACA

Han et al. JAMA Oncol 2018
Sources of Health Insurance Coverage in 2016 (Millions of Persons)

Population
Sum: 340*
Actual: 324

65+ yrs.
Medicare
53

Under 65 yrs.
Non-Institutional
272*

Military
15

Uninsured
27

Employer-Based
155

Other Coverage
90

Medicaid & CHIP
57

ACA Medicaid
11

ACA Exchange
12

Other**
10

*Note: Due to multiple sources of coverage for some individuals, there is some double-counting in the components. The actual U.S. population in December 2016 was approximately 324m.

**Other: The 10m was reduced to tie the total for “Other Coverage” of 90m. “Other” includes 23m persons (9m non-ACA marketplaces, 9m disabled in Medicare, 5m other).

Source data:
CBO “Federal Subsidies for Health Insurance Coverage for People Under Age 65: 2016 to 2026” (March 2016)
Census Bureau “Health Insurance Coverage in the United States: 2015 (September 2016)
Inspiring the National Cancer Prevention Strategies in Japan

Strengthening, inspiring and delivering cancer prevention: Translating research into policy

Manami Inoue, MD, PhD.
Chief, Division of Prevention,
Center for Public Health Sciences, National Cancer Center, Tokyo, Japan

World Cancer Congress 2018
Kuala Lumpur, Malaysia
October 1-4, 2018

Disclosure of Interest: None Declared
Background

- Substantial differences in the pattern of cancer by geographical region.
  - Western countries and Asia

- Results from studies in Western populations tended to be applied to cancer control policies in Japan.
Distribution of BMI (Most recent)

(World Health Organization: Global database on Body mass index)
Trends in Body mass index in Japan by age

The National Health and Nutrition Survey, Japan

Decreasing in all age groups.
Cancer control policy nowadays

Cancer control policies must be tailored to reflect the local lifestyle, burden of cancer and characteristics of the local healthcare system!

The Most Comprehensive recommendations on lifestyle factors and cancer: IARC, WHO/FAO, WCRF/AICR, CUP...

Research considered in these recommendations was mostly derived from Western Countries.
The Research group for the Development and Evaluation of Cancer Prevention Strategies in Japan

- Established in 2003, on-going

- The final goal:
  - Suggest lifestyle modification to have a definite effect on decreasing the incidence of cancer in Japanese.
  - Developing specific, easily implemented prevention methods aimed at modifying the behavior of individuals.

http://epi.ncc.go.jp/en/can_prev/index.html
Translational Research:
To bridge basic results of the investigation to practical application, through a collaborative effort of the frontline scientists searching for causes of cancer and prevention methods.
Methods of Assessment

- Evidence from epidemiological studies among the Japanese population was compiled and organized using the following processes:
  - Literature search and systematic review: qualitative evaluation
  - Meta-analysis or pooled analysis: quantitative analysis
    - Japan Cohort Consortium (2006-)

- Incorporate the results of the risk assessment with risks of non-cancer diseases and total mortality, as well as social concerns where necessary, and prepared a Cancer Prevention Recommendation for Japanese.
Figure 1. Tobacco smoking and total cancer among Japanese: cohort study.

Inoue M et al., Jpn J Clin Oncol 2005;35(7):404-11

Figure 2. Red meat consumption (highest vs. lowest exposure category) and colorectal cancer among Japanese

Pham et al. Jpn J Clin Oncol. 2014
The strength of evidence linking lifestyle factors and infection to the risk of total and site-specific cancer among Japanese population (summary), as of 1 August 2017

Conv, convincing; Poss, possible; Insuff, insufficient; AML, acute myeloid leukemia; BMI, body mass index; M, male; F, female; TB, tuberculosis; HBV, hepatitis B virus; HCV, hepatitis C virus; HPV, human papilloma virus; DM, diabetes mellitus; IARC, International Agency for Research on Cancer; exp, exposure; EBV, Epstein-Barr virus. Figures in brackets indicate the decision year of the strength of evidence.
Original data from major ongoing large-scale population-based cohort studies in Japan starting in the 1980s-1990s.

Evaluate/quantify the association between lifestyle and major forms of cancer in Japanese.

Ten cohort studies are currently involved, with 520,000 study participants in total.

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Baseline Year</th>
<th>Number of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPHC-I</td>
<td>1990</td>
<td>61,595</td>
</tr>
<tr>
<td>JPHC-II</td>
<td>1993-1994</td>
<td>78,825</td>
</tr>
<tr>
<td>JACC</td>
<td>1988-1990</td>
<td>110,585</td>
</tr>
<tr>
<td>MIYAGI</td>
<td>1990</td>
<td>47,605</td>
</tr>
<tr>
<td>Ohsaki</td>
<td>1994</td>
<td>54,996</td>
</tr>
<tr>
<td>3-pref MIYAGI</td>
<td>1984</td>
<td>31,345</td>
</tr>
<tr>
<td>3-pref AICHI</td>
<td>1985</td>
<td>33,529</td>
</tr>
<tr>
<td>3-pref OHSAKA</td>
<td>1983-85</td>
<td>35,755</td>
</tr>
<tr>
<td>TAKAYAMA</td>
<td>1992</td>
<td>31,552</td>
</tr>
<tr>
<td>Life Span Study</td>
<td>1978, 1991</td>
<td>33,792</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>519,579</strong></td>
</tr>
</tbody>
</table>

Inclusion criteria:
(1) Conducted in Japan and started in the mid-1980s to mid-1990s
(2) Included more than 30,000 participants
(3) Collected cancer incidence/death during the follow-up period.

Publications
The association between alcohol drinking and colorectal cancer or colon cancer appears to be stronger in Japanese populations than in Western populations.


Smoking and Infection are the Two Major Factors

Current Evidence-based Cancer Prevention Recommendations for Japanese

Cancer Prevention Recommendation for Japanese (As of Aug 1, 2017)

1. Do not smoke cigarettes. Avoid passive smoking.

2. Drink alcohol in moderation. Drinking should be kept to within ~23 g alcohol per day. People that usually do not drink, or have alcohol intolerance, should not force themselves to drink.

3. Make sure you follow a nutritionally balanced diet.
   - Restrict your intake of salt and salt-preserved products. Keep salt consumption to less than 8 g for men and 7 g for women per day for healthy individuals aged 18 years or more. Consumption of foods high in salt should be kept to no more than one time per week.
   - Ensure sufficient intake of fruit and vegetables.
   - Do not consume too much hot (thermally) food and drinks.

4. Be active in daily life. For example, ~60 min of daily physical activity such as walking or more intensive activity as well as vigorous exercise 60 min a week is needed for healthy adults aged between 18 and 64 years old.

5. Maintain an appropriate weight during adulthood. BMI for middle-aged to elderly men should be between 21 and 27, and between 21 and 25 for middle-aged to elderly women.

6. Get tested for hepatitis virus infection and deal with it appropriately. Get tested for Helicobacter pylori infection if there is an opportunity.

http://epi.ncc.go.jp/en/can_prev/index.html
Conclusion and Future Perspective

- We developed evidence-based cancer prevention recommendations for Japanese.

- As the recommendation is based on currently available epidemiological evidence in Japan, the contents may be amended in the future as more evidence is accumulated.

- The next step should focus on the development of effective behavior modification programs and their implementation and dissemination.
Acknowledgement

- The Research group for the Development and Evaluation of Cancer Prevention Strategies in Japan
  - Funding: National Cancer Center Research and Development Fund (PI: Manami Inoue)

- Current PAF Japan Update Project
  - Funding: KAKENHI Kiban B (PI: Manami Inoue)

Thank you.
Delivering cancer prevention: Challenges in taking policy action

Strengthening, inspiring and delivering cancer prevention: Translating research into policy

Bryony Sinclair
Senior Policy & Public Affairs Manager
World Cancer Research Fund International
Our latest cancer prevention report

- Cancer causes 1 in 6 deaths worldwide
- 1 in 5 men and 1 in 6 women worldwide develop cancer during their lifetime
- Global cancer burden is estimated to have risen to 18.1 million new cases and 9.6 million deaths in 2018
- Overweight or obese in 2016:
  - >1.9 billion adults
  - >340 million children and adolescents aged 5-19
  - 41 million children <5
# Summary of Strong Evidence on Diet, Nutrition, Physical Activity and the Prevention of Cancer

To reference this matrix please use the following titles:


**Abbreviations:** S.E., systematic literature review.

<table>
<thead>
<tr>
<th>Evidence Level</th>
<th>Evidence Score</th>
<th>Validity</th>
<th>Strength</th>
<th>Implications</th>
<th>Literature Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong evidence</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

### References

- World Cancer Research Fund International. dietandcancerreport.org

[Click for full report](https://www.wcrf.org/summarymatrix)
## Strong evidence findings (highlights)

### Increases risk

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater body fatness</td>
<td>• 12 cancers</td>
</tr>
<tr>
<td>‘Fast foods’ ‘Western type’ diet</td>
<td>• Weight gain, overweight and obesity</td>
</tr>
<tr>
<td>Sugar sweetened drinks</td>
<td>• Weight gain, overweight and obesity</td>
</tr>
<tr>
<td>Glycaemic load</td>
<td>• Endometrial cancer</td>
</tr>
<tr>
<td>Red meat</td>
<td>• Colorectal cancer</td>
</tr>
<tr>
<td>Processed meat</td>
<td>• Colorectal cancer</td>
</tr>
<tr>
<td>Alcoholic drinks</td>
<td>• 6 cancers</td>
</tr>
</tbody>
</table>

### Decreases risk

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity</td>
<td>• 3 cancers</td>
</tr>
<tr>
<td></td>
<td>• Weight gain, overweight and obesity</td>
</tr>
<tr>
<td>Wholegrains</td>
<td>• Colorectal cancer</td>
</tr>
<tr>
<td>Foods containing dietary fibre</td>
<td>• Colorectal cancer</td>
</tr>
<tr>
<td></td>
<td>• Weight gain, overweight and obesity</td>
</tr>
<tr>
<td>Breastfeeding: Lactation</td>
<td>• Breast cancer in the mother</td>
</tr>
<tr>
<td>Breastfeeding: Having been breastfed</td>
<td>• Weight gain, overweight and obesity (children)</td>
</tr>
</tbody>
</table>
OUR CANCER PREVENTION RECOMMENDATIONS

Not smoking and avoiding other exposure to tobacco and excess sun are also important in reducing cancer risk. Following these Recommendations is likely to reduce intakes of salt, saturated and trans fats, which together will help prevent other non-communicable diseases.

LIMIT CONSUMPTION OF RED AND PROCESSED MEAT
LIMIT CONSUMPTION OF SUGAR SWEETENED DRINKS
LIMIT ALCOHOL CONSUMPTION

DO NOT USE SUPPLEMENTS FOR CANCER PREVENTION
FOR MOTHERS: BREASTFEED YOUR BABY IF YOU CAN
AFTER A CANCER DIAGNOSIS: FOLLOW OUR RECOMMENDATIONS IF YOU CAN

EAT A DIET RICH IN WHOLEGRAINS, VEGETABLES, FRUIT AND BEANS
BE PHYSICALLY ACTIVE
BE A HEALTHY WEIGHT

wcrf.org/cancer-prevention-recommendations
dietandcancerreport.org
Principles of the Recommendations

• The **Cancer Prevention Recommendations** are designed to be used as the **basis for action** by people and to inform policy action to reduce the incidence of cancer in general.

• Together, they represent an **integrated pattern of behaviours** that can be considered as a single overarching ‘package’.

• **Culturally relevant** throughout the world.

• Guidelines on the **prevention of other diseases** taken into account.
Importance of taking policy action
Factors that affect the risk of cancer and other NCDs: a conceptual framework

Global
- Climate change
- Trade agreements
- Urbanisation
- Food system
- Migration

National
- Advertising & marketing
- Social norms
- Social traditions
- Workplace/school
- Price
- Social status

Local
- Built environment

Personal
- Knowledge, attitudes and beliefs
- Accessibility
- Affordability
- Acceptability
- Physical health
- Economic
- Social

Key:
- Food and drink intake
- Alcohol intake
- Physical activity
- Breastfeeding
Our Driving Action framework

- Diet
- Physical activity
- Breastfeeding
- Alcohol consumption

© World Cancer Research Fund International
Barriers to policy action

• Lack of political will
• Lack of capacity (e.g. access to technical experts)
• Lack of funding
• Evidence in the right format for policy action
• Industry opposition and interference
• Too little evaluation of implemented policies
Key lessons learned

- Political leadership
- Build your evidence
- Develop a broad base of support
- Establish mechanisms to manage conflicts of interest
- Be prepared for push back
Action needed across all sectors of society
Thank you

Email: b.sinclair@wcrf.org
Twitter: @brys Sinclair

twitter.com/wcrfint
facebook.com/wcrfint
wcrf.org/blog
www.wcrf.org/drivingaction
Strengthening, inspiring, and delivering global cancer prevention

International Agency for Research on Cancer
Lyon, France

Isabelle Soerjomataram
Section Cancer Surveillance

WCC, Kuala Lumpur 2018
Strengthening Global Cancer Prevention

2018

18.1 Million

New cases 2018 = 0.5 million

2040

29.4 Million

New cases 2040 (+ demographic changes)
Strengthening Global Cancer Prevention: Tackling Tobacco Smoking

BEING SMOKE FREE CAN PREVENT 15 TYPES OF CANCER

MAKE A CHANGE TO REDUCE THE RISK OF CANCER

- Be smoke free
- Keep a healthy weight
- Be safe in the sun
- Drink less alcohol
- Eat a high fibre diet
- Cut down on processed meat
- Be more active
Smoking-related cancers

World, both sexes

Incidence
- Smoking related cancer: 51.2%
- Breast: 75.8%
- Prostate: 24.2%
- Thyroid: 2%
- Non-Hodgkin lymphoma: 0.8%

Mortality
- Smoking-related cancer: 65.8%
- Breast: 81.9%
- Prostate: 18.1%

Prevalence (5 years)
- Smoking-related cancer: 37.5%
- Breast: 69.3%
- Prostate: 30.7%
- Thyroid: 1%
- Non-Hodgkin lymphoma: 0.7%

8.3 million new cases
9.6 million deaths
46.8 million persons
Lung cancer: 90% related to tobacco smoking
Lung cancer incidence, Very high HDI

Lung cancer incidence medium and low HDI
Future HDI Level Prediction 2035 based on Average Trend 1993-2007 using:

- **Low** Registries in Medium HDI
- **Medium** Registries in Medium/High HDI
- **High** Registries in High/Very High HDI
- **Very High** Registries in Very High HDI

---

**Estimated Annual Percentage Change 1993-2007**

<table>
<thead>
<tr>
<th>HDI Level</th>
<th>1993-2007 Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>-41%</td>
</tr>
<tr>
<td>High</td>
<td>+64%</td>
</tr>
<tr>
<td>Medium</td>
<td>+78%</td>
</tr>
<tr>
<td>Low</td>
<td>+57%</td>
</tr>
</tbody>
</table>

**Estimated number of cases, 2018-2040**

- **High HDI**
- **Very High HDI**

---

**International Agency for Research on Cancer**

**World Health Organization**
Inspiring Global Prevention

Forman, JCP 2018
Inspiring Global Prevention

International Agency for Research on Cancer

Andersson, EJC 2018
Inspiring Global Prevention

Indonesia, males

Age standardized incidence rate per 100,000

Year

2015 2020 2025 2030 2035 2040

Number of new cases (thousands)

[Bar chart showing trends over time with different scenarios: No intervention, Reduction by prevention, No smoking]
Delivering Global Cancer Prevention

Alcohol and health

3 million deaths every year from harmful use of alcohol

World Health Organization

International Agency for Research on Cancer
Delivering Global Cancer Prevention: 40% less

2018: 18.1 Million

2040: 17.6 Million

New cases 2018 = 0.5 million

New cases 2040 (+ demographic changes)
Acknowledgement

- Mathieu Laverssane
- Therese Andersson
- IARC - GLOBOCAN – Cancer Registries
Supplementary
Number of lung cancers cases 2018 and 2040 worldwide

2018

2.1 Million

New cases 2018 = 200,000 cases

2040

3.6 Million

New cases 2040 (+ demographic changes)
Number of new smoking related cancers cases 2018 and 2040 worldwide

2018

9.2 Million

2040

15.3 Million

New cases 2018 = 200000 cases

New cases 2040 (+ demographic changes)