International Workshop on control of cancer as a part of NCD

Cancer Control in Korea

National Cancer Control Institute, Nation Cancer Center

Park, Eun-Cheol
Cancer burden of Korea worldwide

Global (2008)
Population: 6,751 M

Incidence: 12.7 million
Mortality: 7.6 million

Korea (2007)
Population: 48 M
(0.71% of world)

Incidence: 161,920
Mortality: 67,561
Prevalence: 445,270

Source: GOLOBOCAN 2008, IARC, 2010
Causes of Death in Korea

Source: Korea National Statistical Office, 2010
Economic Burden of Cancer

Kim SG et al, 2008

US$ 11.3 Billion

US $ 14.1 Billion

2002

2005

11.3 Billion

7.4

1.6

0.7

1.6

7.9

3.0

0.9

2.3

Productivity Loss Cost of Early Death

Productivity Loss Cost of Disability

Non-Medical Cost

Medical Cost
### Cumulative Risk of Cancer in Korea

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Life expectancy</strong></td>
<td>80</td>
<td>76</td>
<td>83</td>
</tr>
<tr>
<td>(2007)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cumulative Risk</strong></td>
<td>32.1%</td>
<td>34.0%</td>
<td>28.3%</td>
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</tbody>
</table>
Male

- Stomach (70.4)
- Lung (52.1)
- Colorectum (49.7)
- Liver (45.2)
- Prostate (21.5)
- Thyroid (12.8)
- Urinary Bladder (10.0)
- Pancreas (8.9)
- Gall Bladder (8.4)
- Kidney (8.0)

Female

- Thyroid (73.5)
- Breast (47.4)
- Stomach (35.0)
- Colorectum (33.9)
- Lung (20.4)
- Liver (15.4)
- Cervix (14.8)
- Gall Bladder (8.5)
- Ovary (7.5)
- Pancreas (7.1)

Unit: cases/100,000

Major Cancer Site, 2007
Trend of major cancer death rates

Source: Korea National Statistical Office, 2010
Expected Cancer Cases

↑ 54.9%
10 year Plan of Cancer Control
Basic Principle of Cancer Control

WHO, 2002

1/3: Prevention
Anti-smoking campaign
HBV vaccination

1/3: Early detection
Screening

1/3: Palliative care

Add effective distribution of therapeutic resources and research
10-Year Plan of Cancer Control

• 1st 10-Year Plan of CC (1996-2005)
  – Constructing Infra-structure of CC
    • Building Capacity of Cancer Control
    • Setting Program of Cancer Control

• 2nd 10-Year Plan of CC (2006-2015)
  – Operating CC Program effectively and efficiently

Reduction of Cancer Burden

Incidence ↓  Mortality ↓  Survival ↑

Main Program

Primary prevention
Early Detection
Palliative care
Diagnosis & Treatment

Supportive Program

Education & Advocating
Registry & Evaluation
Expanding Capacities

Understand cancer biology/pathology
Develop new diagnosis & treatment
Provide evidence for policy-makers

Research
Basic / Translational / Clinical / Policy
Objectives

Cancer Morality Rate (per 100,000)

- 2005: 112.2
- 2015: 94.1

- 2005: 16.1%
- 2015: 21.6%

5 Year Survival Rate (%)

- 2005: 3.2%
- 2015: 17.0%

Legend:
- Blue: Mortality
- Red: Objective

Cancer Morality Rate (per 100,000)
5 Year Survival Rate (%)

National Cancer Centre

Note: Values are approximate and should be confirmed with the original source.
Primary Prevention: Anti-smoking program

• Increase in Tax on Cigarettes
• Anti-smoking campaign & education
  – Ban on smoking in public places
  – Warning on cigarette packets
  – Education program for youth
  – Say ‘No’ campaign for second hand smoking
• Prohibit promoting the sale of tobacco
  – Ban on cigarette advertising
  – Prohibition of sales to teenagers
PP: Quitline service for smoking cessation

- Smoking cessation counseling
  - by telephone since April 2006
  - ARS, On-line portal services
- Collaboration with 251 Health Centers for pharmacotherapy: NRT and Medical drug by all the health centers charge free
PP: Smoking prevalence: Adults

Source: Ministry of Health & Welfare, Korean Association of Smoking & Health
Source: Ministry of Health & Welfare, Korean Association of Smoking & Health
PP: Hepatitis B vaccination

HBV vaccination History in Korea

- 1985: Temporary basis
- 1995: Regular basis
  (Nationwide childhood immunization)

Positive rate(%) of HBsAg
PP: 10 Action Codes of Cancer Prevention
Early Detection: Organized Cancer Screening

- Nationwide organized cancer screening program
- Managed by two systems
  - Upper 50% contributors: National Health Insurance Screening Program
  - Lower 50% contributors & Medicaid: National Cancer Screening Program

<table>
<thead>
<tr>
<th>Level of Contribution</th>
<th>National Health Insurance</th>
<th>Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

- National Cancer Screening Program (NCSP)
- Stomach
- Liver
- Colorectum
- Breast
- Cervix
ED: Population Coverage for NCSP

- Source population for screening: 24.4 million
  - Women $\geq 30$ yrs and men $\geq 40$ yrs
- No. of persons covered by NSCP: 13.7 million
  - Coverage rate: 56%

![Pie chart showing population coverage for NCSP]

- NHI Beneficiaries (upper 50%)
- Medicaid recipients
- NHI Beneficiaries (lower 50%)

- 10.7 million (44%)
- 12.7 million (52%)
- 1.0 million (4%)
# ED: Screening Guideline of NCSP

<table>
<thead>
<tr>
<th>Cancer</th>
<th>Age</th>
<th>Interval</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stomach</td>
<td>≥40</td>
<td>2 yrs</td>
<td>Gastro-endoscopy or UGI</td>
</tr>
<tr>
<td>Liver</td>
<td>≥40</td>
<td>6 mo</td>
<td>Liver sonography &amp; AFP</td>
</tr>
<tr>
<td></td>
<td>high risk group*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorectum</td>
<td>≥50</td>
<td>1 yr</td>
<td>FOBT → colonoscopy or DCBE</td>
</tr>
<tr>
<td>Breast</td>
<td>≥40, women</td>
<td>2 yrs</td>
<td>Mamography &amp; CBE</td>
</tr>
<tr>
<td>Cervix</td>
<td>≥30, women</td>
<td>2 yrs</td>
<td>Pap smear</td>
</tr>
</tbody>
</table>

* 40 & over with HBsAg positive or anti-HCV positive or liver cirrhosis
ED: Participation Rate of NCSP
ED: Cancer screening rates with recommendations

Source: Korea National Cancer Screening Survey 2004-2009
ED: Evaluating Cancer Screening Units

■ 2006-2007
  □ Enactment for Evaluation of Cancer Screening Unit (ECSU) passed by revision of Cancer Control Act (Oct. 28, 2006)
  □ Model test with 5 hospitals
  □ Establishing three year period evaluation system

■ 2008-2010
  □ 2008: evaluation of general hospitals
  □ 2009: evaluating of hospitals
  □ 2010: evaluating of clinics
### Medical Care: 5Year Relative Survival rate

<table>
<thead>
<tr>
<th>site</th>
<th>Korea (’03-’07)</th>
<th>USA¹) (’99-’05’)</th>
<th>Canada²) (’98-’00)</th>
<th>Japan³) (’97-’99)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Cancer</td>
<td>57.1</td>
<td>66.1</td>
<td>60</td>
<td>54.3</td>
</tr>
<tr>
<td>Stomach</td>
<td>61.2</td>
<td>25.7</td>
<td>22</td>
<td>62.1</td>
</tr>
<tr>
<td>Liver</td>
<td>21.7</td>
<td>13.1</td>
<td>14</td>
<td>23.1</td>
</tr>
<tr>
<td>Cervix</td>
<td>80.5</td>
<td>70.6</td>
<td>75</td>
<td>71.5</td>
</tr>
<tr>
<td>Colorectum</td>
<td>68.7</td>
<td>65.2</td>
<td>59/61 ⁴)</td>
<td>65.2</td>
</tr>
<tr>
<td>Thyroid</td>
<td>98.8</td>
<td>96.9</td>
<td>97</td>
<td>92.4</td>
</tr>
<tr>
<td>Breast</td>
<td>89.5</td>
<td>89.1</td>
<td>87</td>
<td>85.5</td>
</tr>
<tr>
<td>Lung</td>
<td>16.7</td>
<td>15.6</td>
<td>15</td>
<td>25.6</td>
</tr>
<tr>
<td>Pancreas</td>
<td>7.6</td>
<td>5.5</td>
<td>6</td>
<td>6.7</td>
</tr>
<tr>
<td>Prostate</td>
<td>82.4</td>
<td>99.7</td>
<td>94</td>
<td>75.5</td>
</tr>
</tbody>
</table>

⁴) Colon/Rectum
MC: Cancer Patient Financial Aid Program

• Financial support to the lower income group
  – Medicaid
  – Participants of NCSP
  – Under age 18

• Provide 30-70% of out of pocket medical expenditure
MC: Challenges of Medical Care

• Reducing variation of care quality
  – Assessment of quality including patient’s satisfaction
  – Public reporting and Pay for performance (P4P)

• Increasing benefit coverage of National Health Insurance and the amount of financial aid
Palliative Care

• Supporting hospice care facilities
• Providing home-based care of Public Health Center
• Providing education program to the health care providers for palliative care
• Publishing cancer pain control guideline for providers and patients
PC: Cancer Pain Control Guideline
for Health Care Providers

for Patients
Education & Advocating: NCIC

- National Cancer Information Center (2005-)

Web Portal
http://www.cancer.go.kr/
EA: NCIC

• More than 30 education materials
  – Leaflet, booklet, panel and DVD
  – Distributing to public and professionals
Expendng Capacities: NCC

• National Cancer Center

Research Institute  Hospital  National Cancer Control Research Institute
Constructing Infra-structure of CC

- 9 Regional Cancer Center

<table>
<thead>
<tr>
<th>Year</th>
<th>Financial &amp; technical supports</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>By MOHW (NCC) &amp; Regional Gov</td>
</tr>
<tr>
<td>2005</td>
<td></td>
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<tr>
<td>2006</td>
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</table>
Registry & Evaluation: Cancer Registry

• Cancer Registry

Korea Central Cancer Registry

Headquarters: NCC

Start; 1980 Hospital based CR

Coverage: 90% of cancer cases

Survey for NHI claims- Medical Record review for unregistered cancer cases

8 Regional Cancer Registry

Regional CRs

Seoul
Busan
Daegu
Gwangju
Incheon
Daejeon
Ulsan
Jejudo

Coverage: 50% of population

Site-specific Cancer Registry
RE: Cancer Fact Book

Cancer Fact Book

1. Cancer Burden
2. Cancer Prevention
3. Cancer Screening
4. Cancer Care Costs
5. Palliative Care / Cancer Survivor
6. Cancer Infrastructure
7. 10 year Cancer Control Plan
Research

- Develop new diagnosis & treatment Methods, especially Anti-Cancer drug
- Provide evidence for policy-making
Key Success Factors

• Fund
  – Tabaco sales tax by Health Promotion Act(1995)
    • 15 cents / 1.5-2.0 dollars / pack (~2004)
    • 35 cents / 1.9-2.5 dollars / pack (2005~)
  – Fund(2008) : 1.9 billion US$

• Long-term Plan
  – 10-year Cancer Control Plan(1996~)

• Cancer Registry
  – Since 1980
Weakness

• Government driven cancer control
  – Plan & fund from the Government

• A few activities of cancer NGO
  – A few donation for cancer control

• A few evidences of cancer control programs
National Cancer Control Institute
National Cancer Center
Brief History of NCC

1989. 12.  Plan to Establish NCC Formulated by MOHW
2000. 01.  National Cancer Center Act enacted
2001. 06.  Inauguration Ceremony Held
2002. 03.  Nat’l Screening Guideline for 5 Common Cancers Developed
2005. 04.  Nat’l Cancer Control Institute Established
2005. 06.  Research Building Completed
2005. 10.  ‘Vision 2020’ Announced
2007. 03.  Proton Therapy System Introduced
Vision Statement of NCC

We protect the people from cancer and give a hope through innovative research, the best medical care, support for efficient national cancer control programs, and education & training of cancer experts.
Functions of NCC Korea

**Research Institute**
- Creating a new frontiers in cancer research
- Providing a basis on policy formulation
- Indicating the research directions

**Hospital**
- Quality patient care through innovative clinical practice
- Clinical guidelines development
- Analysis/problem finding/policy development

**NCCI**
- Support for National cancer control programs
National Cancer Control Institute

• Think-Tank for cancer control policy
  – Planning and evaluating the National Cancer Control Programs

• Supporting National Cancer Control Programs
  – Prevention, Screening, Palliative care

• Operating Central Cancer Registry, National Cancer Information Center (NCIC) and Quitline

• Research for cancer control
Direction of NCCP

World → Asia → National Level → Community

Next for Asia

Legend:
- Low-income economies (59)
- Lower middle-income economies (54)
- Upper middle-income economies (40)
Next for Asia

• Asian Pacific Rim Region

• 2000
  – Incidence cases  3 M
  – Mortality cases  2 M

• 2050
  – Incidence cases  7.8 M (2.6 times)
  – Mortality cases  5.7 M (2.9 times)

Source: Yang BH, et al. 2004
Next for Asia

• Sharing experiences of cancer control
  – Success and failure

• Korea, Asian countries and WHO
Thank you for your attention