Working Together to Advance Cancer Control:
Essential Principles, Challenges & Opportunities

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Chair, Canadian Partnership Against Cancer
President, INCTR – Canada

NAACCR – June 22nd, 2010
Renewed Collaboration: A Modern Paradigm for Cancer Surveillance
And so, when I took a job in 1980 at the Harvard School of Public Health, I looked around for something to count that could give me an understanding of the public’s health. It had to be something that could be measured accurately: therefore, it could not be “health”. So it had to be “death”. If I wanted to find out what determines when we die, then I would first have to study the history of mortality.

Cairns, J. Matters of Life and Death
Organization of the Presentation:

- About health and human development
- Cancer and population mortality
- Principles of cancer control
- Knowledge translation / transfer
- Data, registries and surveillance in relation to usage and utility
- Conclusion
A Definition of Health
(as proposed by European region of WHO)

Health is the extent to which an individual or group is able, on the one-hand, to realize aspirations and satisfy needs, and, on the other hand, to change and cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living; it is a positive concept emphasizing social and personal resources as well as physical capacities.

International Declaration of Health Rights

• Enjoyment of the highest attainable standard of health ...
• Health is more than the absence of disease ...
• Health care should be based on dialogue and collaboration between citizens, professionals, communities and policy makers (affordable, accessible, effective, efficient and convenient)
• Health begins with healthy development ...
• Health care for the elderly ... Dignity and respect ... Not merely the extension of life
• Health requires a sustainable environment ...
• Health depends on availability of basic essentials ...
• Health depends on protection from exploitation ...

Johns Hopkins School of Public Health. 75th anniversary
### Key Statistics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Area (km²)</td>
<td>9,985,000</td>
</tr>
<tr>
<td>Population (million)</td>
<td>33.9</td>
</tr>
<tr>
<td>Life expectancy at birth</td>
<td>81 years</td>
</tr>
<tr>
<td>GDP (PPP) Total ($)</td>
<td>1.3 trillion</td>
</tr>
<tr>
<td>GDP (PPP) per Capita ($)</td>
<td>39,098</td>
</tr>
<tr>
<td>Health spending per capita</td>
<td>3,900</td>
</tr>
<tr>
<td>Largest cities (million)</td>
<td></td>
</tr>
<tr>
<td>Montreal</td>
<td>3.6</td>
</tr>
<tr>
<td>Toronto</td>
<td>5.1</td>
</tr>
<tr>
<td>HDI</td>
<td>0.966</td>
</tr>
<tr>
<td>GINI coefficient (after tax)</td>
<td>0.32</td>
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</tbody>
</table>
The Nature of our World

If the entire population of the planet is represented by 100 people:

**location and growth**
- 57 live in Asia; ↑
- 21 live in Europe; ↓
- 14 live in America; ↓
- 8 live in Africa; ↑

**wealth**
- 6 people have 57% of the world’s wealth

**literacy**
- 70 people cannot read or write
- 1 person has a college or university education

**malnourished**
- 50 people

**unsafe drinking water access**
- 35 people

**substandard accommodation**
- 80 people

*Canadian Forces Peace Support Training Centre in: Dellaire, R. Shake Hands with the Devil Vintage Canada. 2004: -. 520-1*
Lifetime Risk of Cancer (%)
Causes of Death, Canada 2005

- Cancer: 30.00%
- Circulatory system: 25.00%
- Other: 20.00%
- Respiratory Disease: 15.00%
- Injuries: 10.00%
- Diabetes: 5.00%
- Influenza: 2.50%
- Alzheimer: 2.00%

Circulatory system includes heart & stroke.

Projected Main Causes of Death, Worldwide. All Ages 2005

- Cancer: 10.00%
- Communicable: 30.00%
- Cardiovascular Disease: 30.00%
- Other Chronic: 15.00%
- Injuries: 10.00%
- Respiratory Disease: 5.00%
- Diabetes: 2.50%

Communicable diseases, includes maternal and perinatal conditions, and nutritional deficiencies.

Canadian Cancer Stats 2010
Comprehensive (population-based) cancer control:

- *Aims to reduce the incidence and mortality of cancer, and to enhance the quality of life of those affected by cancer, through an integrated and coordinated approach directed to primary prevention, early detection, treatment, rehabilitation and palliation.*
Principles of a Population-Based Cancer Plan

- Meets the needs of the population
- Comprehensive to spectrum of cancer control
- Equitable, fair, reliable and safe
- Addresses and mitigates disparities (of process of outcome)
- Based in evidence for benefit
- Explicit standards of practice and care guidelines
- Integrated and coordinated
  - Within disease across professionals
  - Across diseases across health sectors
- Evaluable, evaluated and reported
- Sustainable
- Appropriate governance and management
# Population-based Cancer Control – Level of ‘Preparedness’

<table>
<thead>
<tr>
<th>Demographics</th>
<th>TISSUE &amp; CELL ACCESS</th>
<th>MOLECULAR ACCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registries</td>
<td>Cytology; pathology; radiology</td>
<td>Functional pathology &amp; imaging</td>
</tr>
<tr>
<td>Prevention</td>
<td>Early Detection</td>
<td>Comprehensive Cancer Control</td>
</tr>
<tr>
<td>Palliation</td>
<td>Treatment</td>
<td></td>
</tr>
<tr>
<td>End-of-Life Care</td>
<td>Care</td>
<td></td>
</tr>
<tr>
<td><strong>Population Outcomes</strong></td>
<td>Support/Palliation</td>
<td></td>
</tr>
<tr>
<td>Incidence; mortality; Quality of Life</td>
<td>Disease Outcomes</td>
<td>Survival; cure; quality</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interventions (low tech)</th>
<th>Interventions (high tech)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>Surgery (image-guided; laser; robotic)</td>
</tr>
<tr>
<td>Radiation</td>
<td>Radiation – IMRT</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>Systemic, biological &amp; targeted therapies</td>
</tr>
</tbody>
</table>

**Level of intensity of intervention**

**Degree of population coverage**
Cancer Control in Relation to Cancer Care and Cancer Treatment

Cancer Treatment, Care and Control

Target population

Population in health & illness

Cancer patients

Approach

Control

Care

Treatment

Structural management focus and level of integration

Public health

Pop’n health Risk reduction Health system

Networks

Pathways

Standards

Continuity

Centres Hospitals Service

Community service

Sectors

Health system performance

Adapted from: Caron, L., Cancer Control Interventions in Selected Jurisdictions (AETMIS) 2008
Relationship of Control Plans for Cancer & Other NCD’s

DIABETES

Disease Specific Strategies (Federal/Provincial Partnership)

HEART DISEASE

PREVENTION

Healthy Public Policy

Determinants of Health

CANCER

Quality: performance and risk

HR policy: planning: standards: practices

Surveillance: outcomes: definitions: measures

National research plan (alliance)

Balance of treatment: support: palliation

Clinical practice guidelines (best practice)

Standards of practice: quality framework

Organized early detection programs

Health & Well-Being Strategies
Building Capacity

- Information data
- registries
- linked data sets
- surveillance outcomes

- Uptake CPG’s: standards research

- Health Assessment system

- Synthesis for planning

- Exploitation Application Adaptation

- Support for action (implementation)

- Priority setting ‘demand’/capacity policy

- Local strategy & context; culture

- Team building Interdisciplinary Cross sectoral

- Strengthened relationships – research: policy: practice
- Infrastructure capacity building – self-sufficiency: sustainability
- Creations of platforms – integration across geography: diseases, populations

Source: PROPEL – Centre for Population Health Impact
What underlies the ability to ‘build capacity’?

Attributing the ‘need’
- Current burden of cancer
- Future burden of cancer
- Current resources
- Future resources
- Priorities
- Performance standards
- Comprehensiveness
- Evaluation/effectiveness of use
- Allocation/reallocation of resources

Quantifying the ‘need’
- Data
- Standards
- Evaluation
- Policy

Registry & surveillance
- Epi/stats
- Projection
- Burden Resources
- Standards (performance)
- Quality & safety
- Level of self-sufficiency

‘Preparedness’ – context & culture
Knowledge application – ‘preparedness’

- Discovery
- Clinical validation
- Population application

- Technology development
- Infrastructure, Hardware, Technology

- Realization of potential (%)

- Gap (years)

- Policy; Regulation

Time (years)
Steepening the ‘slope’

Speed of subject development within the constituency of interest

Shortening the ‘gap’

Preparedness & receptiveness of constituencies to receive, adapt & adopt
Slope Attributes:
- Vision
- Leadership – subject/content
- Technology development
- Applications & awareness
- Evidence generation
- Investment; funding

Gap Attributes:
- Awareness; recognition; receptiveness
- Leadership – cultural change
- Culture – shared; team; social change
- Business case; health priorities
- Communication; marketing
- Incentives
How can the ‘system’ respond to need and opportunity?

The ‘system’

- Govt/HAs
- Foundations/charities
- Health professionals
- Care-givers
- Patients

The response/role

- Policy; funding
- Funding/advocacy; support
- Coherent care, tx and research
- Care and support
- ‘Voice’

Collective & Collaborative Action

Improved Outcomes
Challenges to Progress:

- Lack of coordination among partners
- Lack of will to unite around a common disease agenda
- Disproportionate resource-centralized (urban) versus communities
- Lack of consensus on priorities, choice and quality of interventions.

Adapted from Alwan, WHO, 2009
Lessons Learned

1. Government commitment and national policies
2. Country ownership of projects and plans
3. Country-based, not centre-based
4. Prioritization of selected areas
5. Realistic approach (need : capacity : performance : resources)
6. Coordination of partners (internal and external)
7. Composition of steering groups
8. Secure funding
9. Continuity and sustainability

Ref: Massoud Samiei, IAEA-PACT, 2009
INCTR – PAX Program

Collaboration - hospital – community – home
- physician – health professional – care giver

• Standards of care
• Guidelines
• Pain & symptom control
• Morphine access
• Health professional training & development
• Interdisciplinary teams
• Professional exchanges
• Salary support
Collaboration: Public / Population / Community and Medical Services:

NCD Prevention and Control Service

1990’s National Prevention and Control Programs – CVS; Cancer; Diabetes

1990’s Campaigns – Anti-smoking; regular exercise; healthy diet
2000  Integrated Community-based NCD prevention and control model.
Focus  4 major risk factors - diet; smoking; inactivity; alcohol abuse
       Wide network of stakeholders
       Collaboration development of guidelines, advocacy, technical expertise

2003  External review of NCCP (Australia CDPA)

2004  National policy to promote healthy life-style
       Demonstration project – replication
       Training programs re healthy life styles
       QA certification program for local health centres
       Base-line population risk factor data
       OP benefit package for prevention services for NCD’s
       Formalization of Alliances
       Shared Vision, Mission, Goals, Objectives
Population-Based Cancer Control Collaboration – Interdisciplinary Tumour Groups – Population Health/Cancer Control

Public Health
- Risk factors
- Registry: data
- Prevention
- Early detection

Cancer Treatment and Care
- Interventions
- Facilities
- Education
- Research

Burden of Illness
- Incidence
- Prevalence
- Interventions
- Survival/disability
- Cost: value
- Sustainability

Information
- System planning
- Implementation
- Evaluation
- Adaptation
<table>
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<tr>
<th>Collaboration – Interdisciplinary Tumour Groups - Brazil</th>
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<tr>
<th></th>
<th>Brazil</th>
<th>British Columbia</th>
<th>Collaboration</th>
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<tbody>
<tr>
<td><strong>Population</strong></td>
<td></td>
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<tr>
<td>Population Health</td>
<td>Healthy Non-cancer</td>
<td>Cancer Population</td>
<td>Comprehensive (prevention -&gt; end of life)</td>
</tr>
<tr>
<td>Cancer Treatment &amp; Care</td>
<td>Cancer</td>
<td></td>
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<tr>
<td><strong>Professionals</strong></td>
<td></td>
<td>Integration</td>
<td>‘Team’ – interdisciplinary</td>
</tr>
<tr>
<td>Public health</td>
<td>Public health</td>
<td>Medical specialists</td>
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<tr>
<td>Medical specialists</td>
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<tr>
<td><strong>Research</strong></td>
<td></td>
<td>Integration into team</td>
<td>Research &lt;-&gt;practice</td>
</tr>
<tr>
<td>Research Institute</td>
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<tr>
<td><strong>Business opportunity</strong></td>
<td>Salary</td>
<td>Private practice</td>
<td>???</td>
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<td></td>
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<td></td>
<td>Mission orientation</td>
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<tr>
<td><strong>Orientation</strong></td>
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<tr>
<td>Health/risk</td>
<td>Health/risk</td>
<td>Illness/treatment</td>
<td>Reduction of burden of illness</td>
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<tr>
<td>Illness/treatment</td>
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<td></td>
<td>Improvement in health</td>
</tr>
<tr>
<td><strong>Success description</strong></td>
<td>↓risk</td>
<td>↓mortality</td>
<td>↓incidence</td>
</tr>
<tr>
<td>↓incidence</td>
<td></td>
<td></td>
<td>↓mortality</td>
</tr>
<tr>
<td>↑quality of life</td>
<td></td>
<td></td>
<td>Individual &amp; societal perspective</td>
</tr>
<tr>
<td><strong>Socio-economic perspectives</strong></td>
<td>PYLL/G</td>
<td>↑resources</td>
<td>Cost : benefit</td>
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<td></td>
<td></td>
<td></td>
<td>Cost : effectiveness</td>
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<td></td>
<td></td>
<td></td>
<td>Value – absolute &amp; relative</td>
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Knowledge Development and Exchange

1. Population monitoring system -> planning, policy, programs.

2. Synthesis of information -> interventions for implementation

3. Implementation and application -> evidence into action

4. Generate information -> new evidence to guide further action/adaptation
<table>
<thead>
<tr>
<th>Then</th>
<th>Now</th>
<th>Tomorrow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk factors</td>
<td>At risk populations (needs)</td>
<td></td>
</tr>
<tr>
<td>Prevalence of risk factors</td>
<td>Disparities and inequities (special needs populations)</td>
<td></td>
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<tr>
<td>Mortality</td>
<td>Burden of illness; disability</td>
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<tr>
<td>Age-specific rates</td>
<td>Biology; physiology; circumstance</td>
<td></td>
</tr>
<tr>
<td>Survival</td>
<td>Stage; impact of interventions; compliance</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Genetics; environment; equity</td>
<td></td>
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</tbody>
</table>
Date and Registries – Past; Present and Future

Then  Now  Tomorrow

Description & quantification of mortality

Health & illness stats

Intervention
  | risk
  | early detection
  | treatment

Societal impact of illness (absolute; relative)

Consequence; projection; options

Cost: cost-effectiveness

Value: sustainability

Description & Quantification  Application & projection  Planning, policy; management; valuation
The Concept of Collaboration

Entity A
- Provide information
- Share & exchange information
- Context
- Culture
- Resources

Entity B
- Context
- Culture
- Resources

C
- Contextually relevant
- Culturally compatible
- Politically acceptable
- Sufficient & sustainable
- Defined leadership/program structure
What and who impacts health and the risks of dying?

- Systems thinking about health and illness
- Commonality of risk factors for NCD’s
- Necessity for collaboration across jurisdictions
- Principles for collaboration:
  - Shared goals
  - Respect
  - Trust
  - Expectation
  - Responsibility
  - Accountability
  - Commitment