Cancer information systems and effective cancer control - developments in Australia

Mark Elwood,
Paul Ireland, Margaret Staples

NATIONAL CANCER CONTROL INITIATIVE, AUSTRALIA
Cancer information systems and effective cancer control: Developments in Australia

presented by Mark Elwood
Director
National Cancer Control Initiative
Cancer Registration in Australia

- 6 states, 2 territories: each has cancer register
- *all supported by legislation; registration compulsory*
- earliest 1972; all areas contributing since 1982
- *government and voluntary funding*
- larger areas have epidemiology research groups
Canberra - national capital
National Cancer Statistics Clearing House

**Location:**
Australian Institute of Health and Welfare AIHW, Canberra

**Funding:** Federal

**Supervision:**
Australasian Association of Cancer Registries AACR

**Functions:**
- compilation & publication of national data
- identification of multiple registrations / multiple tumours
- record linkage to *National Death Index*
- facilitate cancer research and evaluation of interventions
Cancer in Australia
Cancer incidence: Australia and Canada
Rate/ 100,000 eligible; age stand. to world stand. pop.
5 yr relative survival, all sites, diagnosis in 1992-97

[Bar chart showing relative survival rates for males and females in Australia and United States SEER.]
5 yr. relative survival, all sites, approx 1986-90
Cancer prevalence and active prevalence by record linkage

- Western Australia
- PIs Darcy Holman, Kate Brameld

Brameld K et al., AustNZJPubHlth 26, 164-9, 2002
Trends in prevalence of all cancers in Western Australia females, 1990-98.
Aboriginal health
Ratio of age stand. cancer incidence
Aboriginal: other
Northern Territory 1987-93
Cancer in Aboriginal and Torres Strait Islander (ATSI) peoples

- **Cancer incidence differences**
  - increased risk liver, cervix, lung
  - decreased risk colorectal, breast, prostate, melanoma

- **Cancer survival disadvantages**
  - all cancers?
  - staging? access to treatment? acceptability of treatment?
Australia’s special cancer problem
Frequency of non-melanoma skin cancer

Household survey by proportional stratified sampling over 1 year

• Subjects asked about treated skin cancers in last year, and for consent to contact doctor
• Enquiries to obtain type, body site, pathology
• Analysis by age, gender, latitude, skin type
Frequency of non-melanoma skin cancer 1995 by latitude

- BCC, male
- BCC, female
- SCC, male
- SCC, female
Changes in BCC rate 1985 to 1995, by age

% change

20-24
30-34
40-44
50-54
60-64
70+

Age group

-40
0
40
Melanoma incidence per 100,000 by depth, Queensland; females
Registries and cancer control
Cancer control

two themes

Optimising cancer care

• Clinical guidelines
• Surveys of clinical management
• Incentives to improvements

New initiatives

• Consensus approach
• Formal analysis
Cancer control 1:
Optimizing cancer care
Evidence based guidelines for cancer management

• Prepared by Australian Cancer Network
• formally evidence based
• involve health professionals and consumers
• public consultation process
• independent peer review
• specialist, family physician, and consumer guides
Clinical management surveys of cancer

- Registry based
- National surveys for breast, colorectal
- many other sites, state based
- organized by registries, clinical oncology groups, Australian Cancer Network
- about 40 so far
- Response rates 75 to 97%
National colorectal cancer care survey

• New diagnoses of colorectal cancer from 1 Feb to 30 April 2000, from cancer registries; n= 2383
• Questionnaires to surgeons (2383), and to medical oncologists (722) and radiation oncologists (234) if relevant
• Response rate 83% from surgeons
• PI: Prof. Allan Spigelman
An evidence-based model of optimum radiotherapy use

- Review of evidence base for RT usage
- Dynamic model to plan service needs

- PI: Michael Barton
- Consultant: Dr W. Mackillop (Kingston)
Review of indications for radiotherapy

- Cancer incidence by site
- Distribution by stage
- Distribution by other factors e.g. performance status
- Evidence based RT indications
- Summation gives total RT indications by site
Optimal and actual RT use: breast cancer by stage
Cancer control 2:
New initiatives
NCCI consultation on cancer control priorities, 1997

- 36 topic areas
- 36 working parties
  276 actions proposed
- 146 actions selected
  survey of 667 stakeholders
- 30 actions selected
  workshops in each state/terr.
- 21 actions proposed
  13 highest priority
NATIONAL CANCER CONTROL PLAN AND IMPLEMENTATION STRATEGY

Report by the National Cancer Control Initiative to the Department of Health and Family Services

DECEMBER 1997
NCCI consultation on cancer control priorities (1997)

- Resulted in 21 priorities for action up to 2001
- Substantial action on almost all since then
- Actions funded by government and non-government groups

Priorities reassessed in 2001

www.ncci.org.au
Priorities for Action on Cancer Control: 2001 assessment

Inclusion criteria:

clear and defined interventions
sufficient evidence to assess effectiveness
both increments and decrements
across disease pathway from prevention to palliation
effects on mortality, morbidity and quality of life
ranked important by consultation processes
Priorities for Action on Cancer Control: Cancer Strategies Group, chair B. Armstrong; economist R. Carter

Further assessment:

1. scientific evidence of effectiveness
2. marginal cost-benefit analysis by consistent method
3. assessment of equity implications
4. assessment of feasibility implications
Priorities for Action in Cancer Control 2001–2003
Priorities for Action on Cancer Control 2001:13 priorities

**Prevention:** *e.g.* reduce smoking, reduce sun exposure, increase fruit & vegetable consumption

**Diagnosis:** *e.g.* start colorectal screening, change cervical screening to 3 yearly

**Coordinated care:** *e.g.* specialist nurses for breast cancer; psychological support to all patients
Mean cost/DALY (gross, before offsets)

- Tobacco*
- SunSmart*
- Fruit & veg*
- Breast nurses
- Psychologists
Mean cost/DALY (gross, before offsets)
Mean cost/DALY

Cost/DALY

- Tobacco
- SunSmart
- Fruit & veg
- Breast nurses
- Psychologists
- Colorectal screening
- Cervix 2 to 3 yrs
- Cervix 18 to 25
# Equity and acceptability

*(modified from original)*

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Thanks to….

- Paul Ireland, Margaret Staples, Karen Pedersen, Melissa Glogolia  *NCCI*
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- Chris Stevenson  *AIHW, Canberra*
- John Condon  *Darwin, NT*
Priorities for Action on Cancer Control 2001

**Prevention:**
- reduce smoking
- reduce sun exposure
- increase fruit & vegetable consumption

**Diagnosis:**
- start colorectal screening
- change cervical screening to 3 yearly
- improve skin lesion diagnosis
- facilitate informed choice on PSA
Priorities for Action on Cancer Control 2001

Coordinated care:

seamless breast care
multidisciplinary care for lung, ovary
use of clinical guidelines
breast cancer nurses
psychosocial care provision
palliative care strategy
Part of breast cancer tree: ductal carcinoma in situ (DCIS)

Breast conserving surgery

\( (BCS) \) appropriate

DCIS

\( 0.13 \)

prop. of all breast ca.

BCS

\( 0.67 \)

inappropriate

0.33

local recurrence

\( 0.01 \)

no local recurrence

0.99

Outcome 1

\( = \) RT

0.04

Outcome 2

\( = \) RT

0%

Outcome 3

\( = \) No RT

0%
Record Linkage: Western Australia

- **Research**
  - MONICA CHD Register

- **Medicare**
  - Prescribed Drugs
  - Nursing Homes

- **Hospital Data**
  - Home Care
  - Electoral Roll

- **Master Linkage File**
  - Births
  - Deaths
  - Midwives Records
  - Mental Health Register
  - Cancer Register
  - Hospital Morbidity

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