Strengthening collaboration to improve outcomes for people with cancer

(OR HOW CAN WE FURTHER IMPROVE CANCER OUTCOMES?)

Professor David Currow
Chief Cancer Officer & CEO, Cancer Institute NSW
Improving Cancer Outcomes

- What is working well in cancer control?
- Where are there areas where cancer control can be improved?
- How can the system meet needs more effectively?
Improving Cancer Outcomes

• What is working well in cancer control?

• Where are there areas where cancer control can be improved?

• How can the system meet needs more effectively?
All cancers, mortality rates, males and females, 2004

OECD Health 2007
Trends in cancer incidence and mortality rates – actual and projected to 2021
Total cancer cases and deaths per year (1972 to 2036)

Lives at risk from cancer: Cancer Institute NSW
### Five year relative survival in NSW by period of diagnosis

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All cancer</td>
<td>48.7</td>
<td>64.4</td>
</tr>
<tr>
<td>Prostate</td>
<td>59.4</td>
<td>89.8</td>
</tr>
<tr>
<td>Colo-rectal</td>
<td>50.7</td>
<td>65.3</td>
</tr>
<tr>
<td>Breast</td>
<td>73.4</td>
<td>88.3</td>
</tr>
<tr>
<td>Melanoma</td>
<td>87.6</td>
<td>90.0</td>
</tr>
</tbody>
</table>
Percentage change in death rates between 1998 to 2007

- Lung: -17.8
- Bowel: -18.3
- Colon: -16.4
- Rectum: -16.4
- Colon: -13.1
- Rectum: -20.7
- Prostate: -17.3
- Non-Hodgkin’s: -26.1
- Stomach: -27.1
- Bladder: -19.9
- Head and Neck: 18.4
- Kidney: -18.8
- Cervix: -36.9
- Testicular: -45.1

All Cancers: -12.9
Unknown Primary: -29.8
Breast: -12.0
Leukaemia: -20.7
Non-Hodgkin’s: -26.1
Stomach: -27.1
Bladder: -19.9
Head and Neck: 18.4
Kidney: -26.1
Cervix: -36.9
Testicular: -45.1

Male | Female
Improving Cancer Outcomes

International Cancer Benchmarking Project
1995-2007

- NSW, Victoria, Scandinavia (less Finland), United Kingdom (less Scotland) and the 4 largest provinces in Canada

- One single analysis

Improving Cancer Outcomes

International Cancer Benchmarking Project
2005-2007 - 5 year (relative) survival

- Colorectal 66.4% (#1) (52.3-66.4)
- Lung 17.6% (#4) (8.8-20.1)
- Breast 87.8% (#4) (81.0-89.1)
- Ovarian 39.9% (#4) (36.1-44.1)

Improving Cancer Outcomes

• What is working well in cancer control?

• Where are there areas where cancer control can be improved?

• How can the system meet needs more effectively?
Cancers
Cardiovascular diseases
Mental disorders
Neurological & sense disorders
Injuries
Chronic respiratory diseases
Diabetes
Musculoskeletal conditions
Genitourinary diseases
Digestive disorders
Infectious and parasitic diseases
Congenital anomalies
Neonatal conditions
Other

DALYs ('000s)

Source: AIHW; Begg et al. in press.
Deaths from cancer, heart disease and stroke disease

Australian mortality 1968 to 1998
Improving Cancer Outcomes

The whole population.

Smoking rates:

- Adult population: 17.2%
- School children: 8.6%
Improving Cancer Outcomes

The whole population.

Screening rates (NSW):

- Breast: 55.9%
- Cervical: 60.5%
- Colorectal: 32.9% (M 29.9%; F 35.8%)

Australian Institute of Health and Welfare
Improving Cancer Outcomes

At a population level, people with poorer outcomes.

Aboriginal and Torres Strait Islanders – prevention, early detection / screening, incidence, outcomes once diagnosed

Stage-for-stage worse outcomes

Cunningham et al. Lancet Oncol 2008)
At a population level people with cancer.

People from rural and remote communities

Stage at presentation is a far better predictor of differences in mortality than rurality – people present later.
### Odds of presenting with localised cancer by AHS after controlling for all factors

<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Rural</th>
<th>Lower CI</th>
<th>Upper CI</th>
<th>odds of localised</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All</strong></td>
<td>1.00</td>
<td>0.93</td>
<td>0.92</td>
<td>0.95</td>
<td>-7%</td>
</tr>
<tr>
<td><strong>breast</strong></td>
<td>1.00</td>
<td>1.03</td>
<td>0.99</td>
<td>1.07</td>
<td>NS</td>
</tr>
<tr>
<td><strong>prostate</strong></td>
<td>1.00</td>
<td>0.96</td>
<td>0.92</td>
<td>0.99</td>
<td>-4%</td>
</tr>
<tr>
<td><strong>bowel</strong></td>
<td>1.00</td>
<td>0.98</td>
<td>0.94</td>
<td>1.01</td>
<td>NS</td>
</tr>
<tr>
<td><strong>lung</strong></td>
<td>1.00</td>
<td>0.77</td>
<td>0.73</td>
<td>0.81</td>
<td>-23%</td>
</tr>
</tbody>
</table>

CI: Confidence Interval
NS: Not Significant
Improving Cancer Outcomes

• What is working well in cancer control?

• Where are there areas where cancer control can be improved?

• How can the system meet needs more effectively for people already diagnosed with cancer?
Improving Cancer Outcomes

Collaboration with consumers.

• As a system, we are not listening

• Transition points – how do we facilitate these better?

• How does the system ensure physical and psychological support in the wake of a diagnosis of cancer?

• Why can’t we address issues such as parking?
Improving Cancer Outcomes

Collaboration between health professionals.

- Clinicians are caring, committed professionals.

- How do we harness these attributes into system-wide improvements in clinical care?
Collaboration with general practitioners.

• How do we ensure the earliest presentation of people with symptoms that may herald cancer?

• How do we ensure recognition of those symptoms that require more immediate investigation?
Improving Cancer Outcomes

Collaboration with general practitioners.

• There is a challenge in how to ensure access to the most efficient path to diagnosis, staging and a decision about treatment of cancer?

• At a systems level, how can we be sure that relevant patients are referred on for specialist opinions?
Find cancer services in New South Wales

The Online Cancer Services Directory provides information to assist general practitioners, health professionals, patients and their family members who are seeking information about the availability and location of services related to cancer diagnosis, treatment and multidisciplinary care.

Quick Search

Choose the cancer type:
Any

Choose the service type:
Any

Postcode or suburb:

View range:

What’s in the directory?

In this directory, you’ll find referral, contact and other information for:

- Multidisciplinary teams
- Chemotherapy units
- Radiotherapy units
- Palliative care services

You will also find links to supportive care services provided by the Cancer Council NSW, such as accommodation, transport and patient counselling services.

*Find out more*
Search Results

Keyword(s): None
Postcode / Suburb: "cessnock,Region"
Cancer Type(s): All
Service Type(s): "Multidisciplinary team"

The results of your search criteria can be viewed below. Click on an item for more detail, or select filters from the right column to further refine these results.

Displaying results 1 to 10 of 10

1. **Hunter New England Breast Cancer Multidisciplinary Service**
   - Multidisciplinary team: Breast
   - A multidisciplinary service of specialists, nurses and allied health professionals providing specialist care in the treatment of Breast cancer. This service has a regular multidisciplinary care team meeting where complex patient cases are discussed to provide a management plan based on consensus opinion. Referral to the team meeting is determined by the specialist.

2. **Hunter New England Cutaneous Malignancies Multidisciplinary Service**
   - Multidisciplinary team: Melanoma / Skin
   - The Newcastle Melanoma Unit at the Calvary Mater is a multidisciplinary service of specialists, nurses and allied health professionals providing a full range of services for the management of melanoma from early detection and surgical management to medical treatment, clinical trials and palliative care. This service has a regular multidisciplinary care team meeting where complex patient cases are discussed to provide a management plan based on consensus opinion. Referral to the team meeting is generally made by one of the specialists in surgery, radiation oncology or immunology. Most of the patients referred to this meeting have melanoma, although the team also deals occasionally with the more complicated instances of other skin malignancies, for example, SCC's, extensive BCC's and Merkel Cell tumours.

3. **Hunter New England Gastrointestinal Cancer Multidisciplinary Service**
   - Multidisciplinary team: Colorectal
   - A multidisciplinary service of medical specialists, nurses and allied health professionals providing specialist care in the treatment of gastrointestinal cancers. This service has a regular multidisciplinary care team meeting where complex patient cases are discussed to provide a management plan based on consensus opinion. Referral to the team meeting is determined by the specialist.
Hunter New England Lymphoma Multidisciplinary Service

Multidisciplinary team - Haematological

A multidisciplinary service of medical specialists, nurses, and allied health professionals providing specialist care in the treatment of Lymphoma. This service has a regular multidisciplinary care team meeting where complex patient cases are discussed for available treatment options. Referral to the team meeting is determined by the specialist.

Hunter New England has a mix of private and public specialists whom General Practitioners can refer to. The names below refer to Haematologists (most often the next referral step) who are currently affiliated with the tumour specific Multidisciplinary Team.

Multidisciplinary team

Dr Anoop Eineti, Haematologist, (02) 4921 1222
Dr umo Pano, Haematologist, (02) 4921 1222
Dr Phillip Awiti, Haematologist, (02) 4921 1222
Dr Michael Seiden, Haematologist, (02) 4921 1222
Dr Sandra Deveringh, Haematologist, (02) 4921 1222

Care and/or input into treatment options may also be provided by the following healthcare professionals in the Multidisciplinary Team:

Medical Oncologist
Radiation Oncologist
Pathologist
Cancer Care Coordinator/Specialist Cancer Nurse, TBA

Meeting times

The MDT meets weekly on Thursday at the Calvary Mater Newcastle.

Physical address

156 Koobalbus Circuit,
New Lambton,
NBW,
2305
Improving Cancer Outcomes

Collaboration with general practice.

• Can we improve cancer outcomes through models of shared care between oncology services and primary care for people being treated for cancer? (Is there opportunity to more effectively engage general practice beyond prevention / detection / survivorship and specifically include a partnership during treatment?)
Primary Health Care

Welcome to the Primary Health Care Home Page:
The primary health care information on this website is a result of a Cancer Australia funded project to develop cancer treatment information for primary health care clinicians; to read more please follow this link.

Be Involved:
If you are interested in providing feedback on primary health care projects relating to cancer care and you currently work in the primary care setting (e.g. general practitioner, community nurse, practice nurse), please contact evIQ on ContactUs@eviq.org.au. We welcome your feedback and offer a variety of ways to be involved.

Quick Links:
- Cancer Service Directories
- Communication and Referrals
- Education
- MBS Item Numbers
- Statistics and Reports
- Resources and Links

Clinical Links:
- Clinical Devices
- Clinical Trials
- Febrile Neutropenia
- Frequently Asked Questions
- Oncological Emergencies - to come
- Opioid Conversion Calculator
- Oral Chemotherapy Information
- Safe Handling of Antineoplastics
- Side Effects

Features:
- Monthly Feature
  - This month will feature the new layout for the tumour specific pages for the PHC area. Each tumour stream page is receiving an overhaul, and this will ensure a more convenient experience for the user. You will notice there are a number of links to information from other organisations; where there is already good quality information available, evIQ is committed to linking to that, as opposed to recreating information. As more information is developed, this will be made available on these tumour pages. Please view the breast tumour page as an example of the new layout.
Breast Adjuvant FAC (Fluorouracil DOXOrubicin CYCLOPhosphamide)

Patient Population: For the adjuvant treatment of operable breast cancer

Drug Schedule:

Fluorouracil
Day 1
by IV bolus over 3 to 5 minutes

DOXOrubicin
Day 1
by IV bolus over 3 to 5 minutes

CYCLOPhosphamide
Day 1
by IV infusion pump over 30 to 60 minutes

Frequency: Repeated every 3 weeks for 6 cycles

## Neutropenic Alert:

This treatment may cause neutropenic sepsis, which is a *life threatening condition*; delay in treatment can result in an increased risk of morbidity and mortality. If your patient presents with:

- a fever of 38 degrees celsius or higher
- unwell, with or without fever, but presence of shivers, chills, rigors, hypotension

Refer to hospital immediately

The risk is of grade 3 to 4 neutropenia and the nadir is commonly midway between cycles. Link to the Immediate Management of Febrile Neutropenia for more information.

## Clinical Alert:

The use of Anthracyclines and Fluorouracil have been associated with cardiac toxicity; and Fluorouracil with gastrointestinal toxicity; if your patient presents with:

- chest pain and/or shortness of breath (dyspnoea)
- uncontrolled diarrhoea (grade 3-4)

Refer to hospital immediately

Link to Anthracycline Related Cardiac Toxicity Considerations for information on risk assessment, monitoring and maximum cumulative doses, and refer to the acute cardiotoxicity side effect.

Link to Cardiac Toxicity associated with Fluorouracil for more information; patients with a previous history of cardiac disease or other risk factors should be monitored closely (this is less likely to occur with a bolus dose than with an infusion, of Fluorouracil).

## Clinical Considerations:

**Dihydropyrimidine Dehydrogenase (DPD) Enzyme Deficiency:** Rare, life-threatening toxicities such as stomatitis, mucositis, neutropenia, and neurotoxicity have been reported following intravenous fluorouracil.

Fluorouracil significantly reduces the metabolism of warfarin, increasing its anticoagulant effect; INR and signs of bleeding need to be monitored regularly. Warfarin dose adjustments or alternative medications may need to be considered.

**Moderate Nutritional Risk:** consider dietitian review every two to three weeks, and review every cycle.

**Hepatitis B Screening and Prophylaxis:** screening is recommended in all cancer patients who are to receive treatment requiring cytotoxic and/or immunosuppressive therapy.

**Fertility and Options for Preservation of Fertility:** need to be considered for patients receiving anti-tumour treatment/s...
Improving Cancer Outcomes

Collaboration between service providers.

• eviQ is part of creating a community of practice in oncology that brings together different disciplines in one evidence-based space with one goal – improving cancer outcomes.
Improving Cancer Outcomes

Collaboration between service providers.

• Multi-disciplinary care. Evidence of improved:
  • Survival, satisfaction, perceived quality of health care (patients);
  • patterns of treatment, staging, coordination of care, better use of available evidence and better communication between clinicians (practitioners / system improvements)
Improving Cancer Outcomes

Collaboration between service providers.

• When planning cancer services, it should not be one oncological discipline against another. If you need another radiation oncologist, chances are you need another medical oncologist, another palliative care physician, and additional resources for pharmacy, occupational therapy, physiotherapy, social work etc.
Improving Cancer Outcomes

Collaboration between service providers.

• The NSW Cancer Registry and linked data sets

• Learning to benchmark

• What are the ideal clinical indicators that can provide early warning of a part of the health system not performing optimally?
From information to system change and performance improvement

Collaboration between service providers

How do we transform data into information that can be used to improve outcomes?

How can we best identify avoidable variations in clinical outcomes?
Investigation of clinical variation

Collaboration between service providers

Program of work using data from Central Cancer Registry linked to Admitted Patient Data Collection (APDC) for 2000-2008

Commenced with standard hospital-wide clinical indicators sourced from NSW Health and ACHS:

- Length of stay (LOS) > 21 days;
- Unplanned readmission to hospital within 28 days; and
- 30-day mortality.
## Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
<th>Indicator Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Readmission within 28 Days</td>
<td>Admitted at the same or another hospital within 28 days of separation; &amp; The condition requires treatment within 24 hours of diagnosis</td>
<td>NSW Health.</td>
</tr>
<tr>
<td>Length of stay greater than 21 days</td>
<td>Includes patients that remained in hospital for more than 21 days, including transfers</td>
<td>NSW Health.</td>
</tr>
<tr>
<td>30-day Mortality</td>
<td>Patients who died within 30 days of surgery</td>
<td>NSW Health</td>
</tr>
</tbody>
</table>
# Patient Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Principal Ref A</th>
<th>Principal Ref B</th>
<th>Major Metro</th>
<th>Major Non-Metro</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median (yrs)</td>
<td>69.2</td>
<td>72.5</td>
<td>72.6</td>
<td>72.1</td>
<td>70.1</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (%)</td>
<td>64.4</td>
<td>64.3</td>
<td>57.9</td>
<td>61.2</td>
<td>62.2</td>
</tr>
<tr>
<td><strong>Co-morbidity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some (%)</td>
<td>34.4</td>
<td>31.3</td>
<td>29.3</td>
<td>28.3</td>
<td>19.6</td>
</tr>
</tbody>
</table>
Patient Characteristics cont...

<table>
<thead>
<tr>
<th>Degree of Spread</th>
<th>Localised</th>
<th>Regional</th>
<th>Distant</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Ref A</td>
<td>28.0</td>
<td>51.8</td>
<td>17.9</td>
<td>2.3</td>
</tr>
<tr>
<td>Principal Ref B</td>
<td>23.0</td>
<td>59.1</td>
<td>14.3</td>
<td>3.6</td>
</tr>
<tr>
<td>Major Metro</td>
<td>30.7</td>
<td>54.3</td>
<td>12.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Major Non-Metro</td>
<td>26.3</td>
<td>48.7</td>
<td>13.2</td>
<td>11.8</td>
</tr>
<tr>
<td>Private</td>
<td>29.6</td>
<td>55.9</td>
<td>8.0</td>
<td>6.4</td>
</tr>
</tbody>
</table>

| Urgency of Admission (%) | 15.1 | 17.5 | 22.9 | 17.8 | 3.3 |
### Number of facilities and procedures in each peer group over 8 years

<table>
<thead>
<tr>
<th>Peer Group</th>
<th>Number of Hospitals</th>
<th>Number of Procedures</th>
<th>Median (range)</th>
<th>Mean (std dev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Ref A</td>
<td>9</td>
<td>710</td>
<td>80 (32-111)</td>
<td>78.9 (24.9)</td>
</tr>
<tr>
<td>Principal Ref B</td>
<td>4</td>
<td>252</td>
<td>46.5 (39-120)</td>
<td>63 (33.2)</td>
</tr>
<tr>
<td>Major Metro</td>
<td>12</td>
<td>140</td>
<td>7.5 (3-25)</td>
<td>11.7 (7.5)</td>
</tr>
<tr>
<td>Major Non-Metro</td>
<td>11</td>
<td>152</td>
<td>15 (1-24)</td>
<td>13.8 (6.3)</td>
</tr>
<tr>
<td>Private</td>
<td>39</td>
<td>547</td>
<td>3 (1-95)</td>
<td>14 (20.9)</td>
</tr>
</tbody>
</table>
Readmission within 28 days

Peer Group

- Principal Ref A
- Principal Ref B
- Major Metro
- Major Non-Metro
- Private
- Other

OR and 95% CI

0 1 2 3 4 5
## Surgical Outcomes by Peer Group

<table>
<thead>
<tr>
<th>Peer Group</th>
<th>Number of Hospitals</th>
<th>Number of Procedures</th>
<th>LOS &gt; 21 Days (OR)</th>
<th>Readmit to Hospital (OR)</th>
<th>30-day Mortality (OR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Ref A</td>
<td>9</td>
<td>710</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Principal Ref B</td>
<td>4</td>
<td>252</td>
<td>1.6 (1.1 – 2.2)</td>
<td>0.7 (0.4 – 1.3)</td>
<td>1.6 (0.8 – 2.9)</td>
</tr>
<tr>
<td>Major Metro</td>
<td>12</td>
<td>140</td>
<td>1.3 (0.9 – 2.0)</td>
<td>1.3 (0.7 – 2.4)</td>
<td>0.9 (0.4 – 2.3)</td>
</tr>
<tr>
<td>Major Non-Metro</td>
<td>11</td>
<td>152</td>
<td>1.2 (0.8 – 1.8)</td>
<td>2.4 (1.5 – 4.0)</td>
<td>1.3 (0.6 – 2.8)</td>
</tr>
<tr>
<td>Private</td>
<td>39</td>
<td>547</td>
<td>0.5 (0.4 – 0.7)</td>
<td>0.8 (0.5 – 1.2)</td>
<td>0.3 (0.2 – 0.8)</td>
</tr>
</tbody>
</table>
## Adjusted outcomes (%, 95% CI) by hospital volume, 2000-2008*

<table>
<thead>
<tr>
<th>Annual hospital volume</th>
<th>Postoperative procedure (%)</th>
<th>&gt;21-d stay (%)</th>
<th>28-d unplanned readmission (%)</th>
<th>30-d mortality (%)</th>
<th>90-d mortality (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>11.0 (5.4,16.7)</td>
<td>37.9 (30.1,45.7)</td>
<td>11.9 (6.4,17.5)</td>
<td>6.9 (2.6,11.3)</td>
<td>10.6 (5.4,15.8)</td>
</tr>
<tr>
<td>&gt;2-6</td>
<td>10.0 (6.9,13.1)</td>
<td>43.4 (38.6,48.3)</td>
<td>14.4 (10.7,18.1)</td>
<td>4.8 (2.6,7.0)</td>
<td>6.3 (3.7,8.8)</td>
</tr>
<tr>
<td>&gt;6</td>
<td>7.1 (4.9,9.3)</td>
<td>36.1 (32.1,40.1)</td>
<td>18.9 (15.2,22.5)</td>
<td>2.8 (1.4,4.3)</td>
<td>4.9 (3.1,6.7)</td>
</tr>
</tbody>
</table>

*Adjusted for sex, age at admission, extent of spread within 4mo diagnosis, Charlson Comorbidity Index, Urgency of admission, facility type (public or private), year of separation and procedure type (PD or other)
After adjusting for age, sex, co-morbidities, degree of spread, urgency of admission and year of separation, there is still outcome variation across facility types.

Further analyses are required – multilevel model including number of procedures and peer group.

CINSW is working closely with clinicians, NSW oncology groups and Directors of Cancer Services to refine indicators and analyses, and drive outcome improvements and reductions in outcome variations.
From information to system change and performance improvement

Collaboration between levels of government

How can we justify no realistic access to medical benefits schedule (MBS) or pharmaceutical benefits schedule (PBS) data in order to understand the complete picture of the care that is offered in cancer?
Improving Cancer Outcomes

Translational Cancer Research Centres (TCRC)

Three key roles
1. Bench to bedside
2. Bedside to bench
3. Evidence into established practice
Improving Cancer Outcomes

- Ultimately, collaboration with and between:
  - consumers
  - primary care
  - specialist care
  - governments

is needed if we are to improve the outcomes for people diagnosed with cancer.

- Such a partnership is an imperative in an increasingly complex environment