


**HSC PDHPE
CANCER**

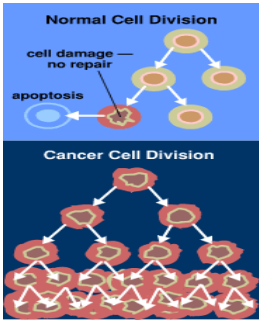

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WHAT IS CANCER

- Abnormal cells
- Divide without control
- May infiltrate and destroy normal body tissues
- Can travel throughout the body

CELLS BEHAVING BADLY!



HOW DOES CANCER SPREAD?

Local Spread

- Invasion into surrounding tissue

Distant Spread

- Lymphatic System
- Circulatory System

CANCER REGISTRATION IN NSW

- Notification of cancer is a **statutory requirement** in NSW (except non-melanoma skin cancers)
- **Notifiers:** public and private hospitals (inpatients and outpatients), radiation oncologists, pathology laboratories, nursing homes, day procedure centres
- Maintained by the NSW Central Cancer Registry at the Cancer Institute NSW





- Cost of cancer
- Inequities in cancer
- Philosophy behind CCNSW Health Strategies
- Extent of the problem – cancer statistics (new cases, incidence, mortality rates, projections)
- Focus on Breast cancer
- CCNSW - Healthy eating initiatives + Measure Up program
- Focus on Lung cancer
- CCNSW – Tackling Tobacco initiative
- Focus on Melanoma
- CCNSW – SunSmart initiative
- Summary of Student Activities



COST OF CANCER

The average lifetime financial cost of cancer on a household in NSW is around 1.7 years of annual household income.

- Individual/family costs (loss of income) are variable
- Premature mortality can have long-term financial impact on household
- Approx. 60% of people survive their disease → issues of survivorship & coping financially are gaining prominence
- Chronic illness – requires ongoing medication & monitoring
- For eg. A pensioner with bowel cancer face cost of approx. \$10,000



COST OF CANCER

The NSW Government spends approximately \$800 million each year on the prevention, management and treatment of cancer.

In addition, the Australian Government in NSW spends about \$200 million on cancer through general practitioners and other services.



Inequities in Cancer

Low Socioeconomic Status

- Poverty = single most important determinant of poor health
- Related to level of education
- Low levels education → higher risk of unemployment
- Low SES more likely to adopt & maintain unhealthy behaviors (e.g., smoking) due to poor knowledge/attitude re: risk + reduced access to cessation programs, healthy food choices etc.
- More likely to work in manual occupations – higher risk of being exposed to cancer causing agents (e.g., diesel)
- Poor access to treatment services (cost related)



Inequities in Cancer

Age

- Personal mobility
- Poor social support
- Co-morbid conditions

Rurality

- Poor access to prevention, early detection, treatment services
- Limited or no public transport
- Isolation, poor social support



Inequities in Cancer

Ethnicity

- Language barriers
- Access barriers

Indigenous

- Multiple disadvantages – regional/rural locations, low SES, cultural barriers, unhealthy behaviors (e.g., highest smoking rates)



CANCER FACTS



- Cancer is not one disease
- Some risks are modifiable
- Others cannot be avoided through personal action
- Unknown risk factors
- Synergic risks
- Individual susceptibility



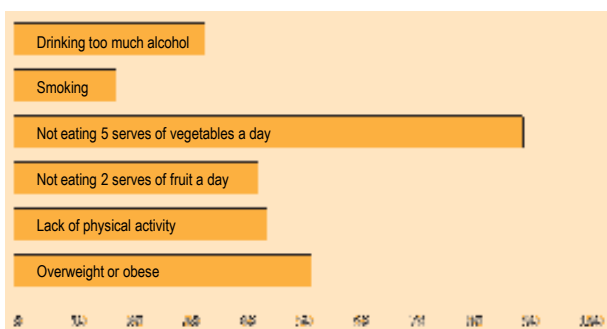
Lifestyle and Cancer Prevention

✦ Approximately half of all cases of cancer may be preventable by:

- not smoking
- eating a healthy diet
- being physically active
- maintaining a healthy body weight
- drinking alcohol more responsibly
- protecting ourselves against UV radiation



Risky Behaviour in NSW Adults – 2008 (%)



NSW Department of Health 2009



SOCIETY

Improved laws, public policies & programs to reduce cancer risk and to improve the lives of cancer patients and families

Increase understanding of & support for cancer control amongst political & community leaders

ORGANISATIONS AND SETTINGS

Improved policies and practices to reduce exposures, change group norms, facilitate healthy choices

INDIVIDUALS

Knowledge, Attitudes
Behaviours

Develop new knowledge to increase effectiveness and targeting of programs and policies



Individual Behaviour Change

Healthy Eating
Healthy Activity
Healthy Weight

Environment
(the gradient is steep)

*Adapted from Puska, 2001

Individual Behaviour Change

Healthy Eating
Healthy Activity
Healthy Weight

Environment
So, changing the slope.....

*Adapted from Puska, 2001

Individual Behaviour Change

Healthy Eating
Healthy Activity
Healthy Weight

Environment
..will make it easier to change behaviour

*Adapted from Puska, 2001

CANCER STATISTICS

- aihw.gov.au/cancer/
- statistics.cancerinstitute.org.au/
- Graphs and tables of cancer data (incidence and mortality)
 - Age, sex, time
 - Area Health Service (and LGA)
 - Cancer Council Region (and LGA)
 - Region of birth
 - Socio Economic Status, remoteness
- Updated annually



CANCER STATISTICS

- New cases (absolute number)
- Incidence/Mortality & Age Standardisation
- Controls for different 'make-up' of groups we want to compare

Eg. We want to compare the incidence of breast cancer in women 60+ in Sydney & Wagga Wagga

- Population of women in each of these areas differ
- In absolute numbers, Sydney would have larger number of women diagnosed compared to Wagga
- This crude rate would therefore indicate that Sydney has a breast cancer epidemic compared to Wagga



CANCER FACTS & FIGURES NSW 2007 – An overview

New Cases 36 043

Deaths 13 227

Top 5 Cases:

- Prostate: 6665
- Bowel: 4889
- Breast: 4226
- Melanoma: 3528
- Lung: 3216



Top 5 Deaths:

- Lung: 2604
- Bowel: 1720
- Prostate: 977
- Breast: 908
- Unknown site: 790

Lifetime risk to age 75:

- Males: 1 in 3
- Females: 1 in 4
- Persons: 1 in 3

Lifetime risk to age 85:

- Males: 1 in 2
- Females: 1 in 3
- Persons: 1 in 2



CANCER FACTS & FIGURES



Most common type of cancer

- Prostate (32%)
- Bowel (13%)
- Melanoma (10%)
- Lung (10%)

Most common type of cancer

- Breast (27%)
- Bowel (13%)
- Melanoma (9%)
- Lung (8%)

Most common cause of death

- Lung (21%)
- Prostate (13%)
- Bowel (13%)

Most common cause of death

- Lung (17%)
- Breast (16%)
- Bowel (13%)



CANCER - TRENDS 1998-2007

- Incidence in males ↑ 11%
- Incidence in females remained stable
- Mortality in males ↓ 12.9%
- Mortality in females ↓ 6.4%



CANCER - Incidence (1998-2007)

- Males 1.5x more likely to be diagnosed with cancer



- Head & Neck: Males ↓12.4%, Females stable (8.9%)

- Alcohol & tobacco consumption linked to H & N, main reason why rates are ↓ in males

- Males: Prostate ↑ 55%, Kidney 13.9%

- PSA testing procedures

- Females: Uterine ↑ 17.3%, Cervix ↓ 28.5%

- ? Due to greater investigation following routine Pap Smear taken as part of cervical screening



CANCER - Mortality (1998-2007)

- Males 1.6x more likely to die from cancer
- Bowel: Males ↓ 18.3%, Females ↓ 15.7%
 - Earlier/better treatments



- Leukaemia: Males ↓ 20.7%, Females ↓ 20.7%
- CUP: Males ↓ 33.3%, Females ↓ 29.8%
 - Better coding
- Liver: Males ↑ 54.3%, Females ↑ 139.4%
 - Due to an increase in incidence



CANCER - Survival

- ↓ - stage at diagnosis, age at diagnosis
- Overall 5 year survival rate – 63%

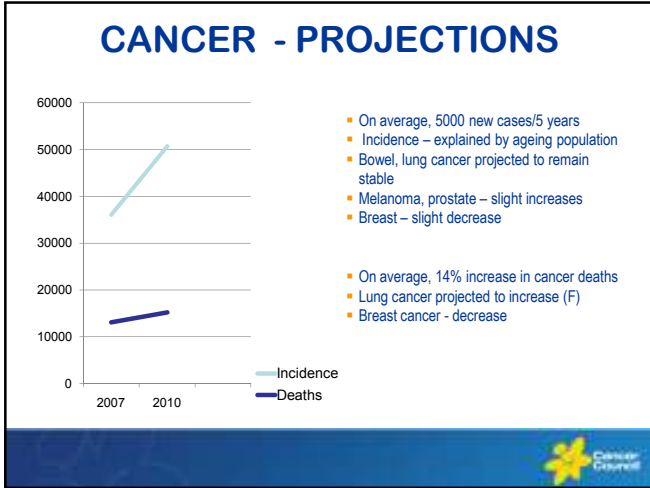
5yr survival rate	Cancer type(s)
80% +	Testes, thyroid, lip, melanoma, prostate, breast, Hodgkins
74-52%	Uterus, cervix, colon, rectum, kidney
46-30%	Leukaemia, ovary, multiple myeloma, stomach
< 20%	Brain, oesophagus, unknown primary, liver, lung, pancreas, mesothelioma



CANCER - PROJECTIONS

- Are used to:
 - Set priorities for research & cancer control activities
 - Assist health planners allocate resources
- Depend on mathematical modeling of trends in the past + assumption that these will continue





BREAST CANCER

- New cases (2007): 4226 (Males 30; Females 4196)
- Deaths (2007): 908 (Males 6; Females 902)

Females

- 1st for incidence, 2nd for mortality
- Risk: 1 in 11 women by age 75; 1 in 9 women by age 85

1998-2007

- No change in incidence rates
- Mortality rates ↓ 12%


Cancer Council

BREAST CANCER

Year	Median age at diagnosis	Median age at death
1977	59	63
1997	60	66
2007	60	70

- 5 year survival rate (1999-2003) – 88%

Cancer Council




BREAST CANCER

Risk Factors - Known

- Female
 - women are 100x more likely than men to be diagnosed
- Increasing age
- Family history
 - 1st degree relative – 2x times more likely to be diagnosed
- Excessive alcohol consumption
- Obesity
- HRT

Risk Factors - Possible

- No children/children after age 30
- Early menstruation
- Late menopause
- No/limited breastfeeding





BREAST CANCER

Protective Factors

- Regular exercise
- High vegetable consumption
- Breastfeeding > 12 months
- Earlier age at birth of child (< 25yrs)
- 4+ births





Eat It To Beat It

- ✦ ↑ awareness of the health benefits of fruit & vegetables
- ✦ ↑ knowledge about recommended intakes & serving sizes
- ✦ ↑ attitudes toward the consumption of fruit & vegetables
- ✦ Improve the skills & self-efficacy of parents in providing adequate amounts of fruit & vegetables for their children
- ✦ Decrease the barriers to fruit and vegetable consumption






Strategies and achievements in Hunter

- * Fruit & Veg \$ense Program
 - 122 Program Facilitators trained
- * Fruit 'n' Veg Fundraiser
 - 72 schools participating, major revamp of communications strategy
- * Fruit 'n' Veg Month in primary schools
 - Being conducted for 3rd year - 87 schools from Hunter participating
- * Fruit and vegetable retail promotions
 - 3 shopping centre promotions conducted
- * Communication Strategy
 - Significant TV, radio and print media exposure
- * Evaluation
 - RCT completed end September
 - Pre-program CATI with published journal article



Are you overweight?

Measure your waist circumference

- **Increased risk*:**
 - Men: more than 94 cm
 - Women: more than 80 cm
- **Greatly increased risk*:**
 - Men: more than 102 cm
 - Women: more than 88 cm



Measure your body mass index (BMI)

- **BMI = weight (kg) ÷ height (m)²:**

< 18.5	Underweight
18.5-25	Healthy weight
25-30	Overweight
> 30	Obese




Measure Up Campaign

- National campaign to tackle chronic disease in Australia
- Aim – to encourage people to make changes to their lifestyle related behaviour




LUNG CANCER


- New cases (2007): 3216 (Males 1967; Females 1249)
- Deaths (2007): 2604 (Males 1605; Females 999)



1.9x times more likely to be diagnosed
1.9 times more likely to die
3rd for incidence, 1st for deaths
Risk: 1 in 26 men by age 75
1 in 12 men by age 85



4th for incidence, 1st for deaths
Risk: 1 in 46 women by age 75
1 in 24 women by age 85



LUNG CANCER 1998-2007

Incidence

- ↓ Males 15.5%, ↑ Females 23%
- ↓ in lung incidence in males due to smoking cessation


Mortality

- ↓ Males 17.8%, ↑ Females 23.9%
- Uptake of smoking among females occurred later – therefore impact only now being observed


5 year survival

- 13% Males, 15% Females

Year	Median age at diagnosis	Median age at death
1977	66 M, 65 F	67 M, 66 F
1997	70 M, 70 F	71 M, 71 F
2007	72 M, 71 F	74 M, 73 F




LUNG CANCER



Risk Factors

- Tobacco smoke (passive or active smoking)
 - Duration of smoking is the strongest determinant of lung cancers in smokers
 - Risk increases with duration & quantity
- Excessive alcohol consumption

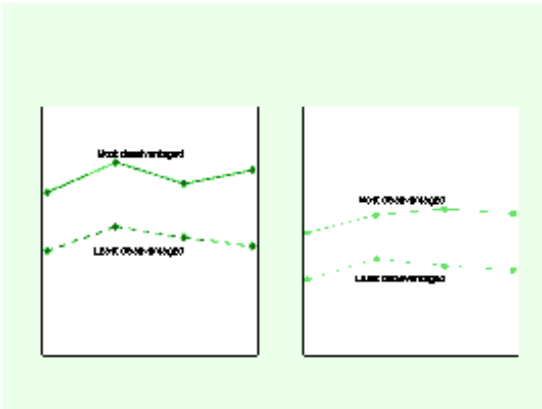


LUNG CANCER

Environmental/Occupational risk factors

- Asbestos, silica fibres
- Possible risk factors
- Choral methyl ether
- PAHs
- Diesel fumes
- Air pollution
- Metals
- Ionizing radiation
- Arsenic in drinking water (S)
- Betacarotene (S)
- Chronic lung disease
- Chronic pulmonary disease
- Interstitial lung disease
- Schleroderma
- Rheumatoid disease
- Sarcoidosis
- Tuberculosis







- ✦ Peak partnership NCOSS and CCNSW
 - ✦ Working with the welfare sector to support assisting disadvantaged clients to stop smoking
 - ✦ Training and community grants
 - ✦ Over 70 organisations involved (reaching nearly 800 staff)
 - ✦ Pre-post survey of managers/staff
- 'Our organisation has the resources to support a client to quit'*
- 54% agreed pre training
 - 95% agreed immediately post training
 - 88% agreed at 3 months post training

Updated June 2010



Target groups

- * People with mental illness
- * Aboriginal people
- * People with drug and alcohol problems
- * Vulnerable young people
- * Low income single parents
- * Homeless people



Why community services?

- * Reach - about 7000 in NSW
- * Access to and involvement with the target groups
- * Commitment to justice and equity for their clients
- * Whole person approach- wellbeing
- * Flexibility and capacity for innovation
- * *Mission Australia, Uniting Care, St Vinnies*




What do we hope to achieve?

- * Make smoking care part of usual care through:
 - Supportive service environments
 - Active casework
 - Ask
 - Support
 - Refer




MELANOMA


- New cases (2007): 3528 (Males 2123; Females 1405)
- Deaths (2007): 482 (Males 342; Females 140)



1.7x more likely to be diagnosed
3x more likely to die
2nd for incidence, 7th for deaths
Risk: 1 in 23 men by age 75
1 in 13 men by age 85



3rd for incidence, 12th for deaths
Risk: 1 in 36 women by age 75
1 in 25 women by age 85



MELANOMA 1998-2007

Incidence

- ↑ Males 15.9%, ↑ Females 11.6%


Mortality

- No change
- ↑ incidence over past 30 years due to lifestyle changes

5 year survival

- 88% Males, 93% Females


Year	Median age at diagnosis	Median age at death
1977	51 M, 47 F	60 M, 56 F
1997	62 M, 56 F	70 M, 68 F
2007	66 M, 60 F	73 M, 74 F



MELANOMA

Risk Factors

- Over exposure to UV radiation (sun) Tobacco smoke (passive or active smoking)
- ↑ risk for ppl with freckles, skin that burns, more moles, blue eyes, red hair
- Family history
- 1 or more episodes of severe blistering sunburn during childhood
- Male
- ↑ risk in kidney, heart transplant, AIDS patients
 - Relative to the degree of immuno-suppression





Unbranded Youth Campaign

It's a beautiful day.....for cancer

The image shows a close-up of a person's face that has been severely disfigured by cancer, with a grotesque, textured appearance. To the right of this image is a small cartoon stick figure holding a glowing lightbulb, symbolizing an idea or awareness.

Sun Sound

- ✦ Sun Sound is an environmental strategy that aims to improve sun protection behaviours at the point of sun exposure.
- ✦ Short, catchy jingle played outdoors at regular intervals on loud speakers at beaches and outdoor areas.
- ✦ Successfully trialled in Sutherland and Gosford over summer 2009/10, in partnership with local Councils
- ✦ Extensively broadcast at eight popular beaches, four leisure centres, Australia Day celebrations, Cronulla Sharks Stadium and Blue Tongue Stadium.

The Sun Sound logo consists of a stylized sun with rays, positioned above the text "BE SUN SOUND" and a graphic of sound waves.

Sun Sound

- * Positive evaluation results 2009/10 trial: strong understanding of the Sun Sound message (84%), high levels of recall and recognition (80%) and strong community support for playing the Sun Sound in outdoor areas as a sun protection reminder (88%).
- * Initiative to be expanded further across 8 of 10 CCNSW regions in summer 2010/11.



SunSmart Programs

- * Early Childhood program:
Launched 2006 - 65%
- * Family Day Care:
Launched 2008 - 73%
- * Primary Schools:
Launched 2008 – 15%



Student Activities

- Identify barriers & enablers of healthy behaviours in various community groups e.g., elderly, rural, children
- Cancer statistics - research a particular cancer/specific group. What do they mean? Why might it this be the case?
- Design a campaign to target smoking behaviour in high school/University students
- Analyse the CCNSW viral campaign for sun awareness
- Plan & describe a school based cancer awareness campaign

