Innovative Medicines South Africa

National Health Insurance Policy Brief 5

The Impact of Cancer on a Future NHI

The purpose of this series of policy briefs on National Health Insurance (NHI) and the related IMSA web-site is to put in the public domain material and evidence that will progress the technical work of developing a National Health Insurance system in South Africa. This includes tools for costing NHI and evidence on where savings could be achieved in moving to a future mandatory system with universal coverage.

Policy Brief 3 dealt with the impact on a future NHI of the 25 chronic diseases that make up the Chronic Disease List in medical schemes, including asthma, diabetes mellitus, hypertension and hyperlipidaemia. Policy Brief 4 dealt with the how to determine the impact of HIV/AIDS and related diseases like tuberculosis. This Policy Brief discusses what is known about cancer in South Africa and how estimates of the future burden of cancer might be made. Resources that could be adapted for planning a comprehensive cancer service for the National Health Insurance system are described.

1. Cancer in South Africa

The Cancer Association of South Africa (CANSA) says:[1] "One in six South African men and one in seven South African women will get cancer during their lives. Cancer is a great equalizer. It knows no boundaries of class, race and gender, sex or age. It can strike anyone at any time". The graph below shows the expected incidence of cancers in 2009.

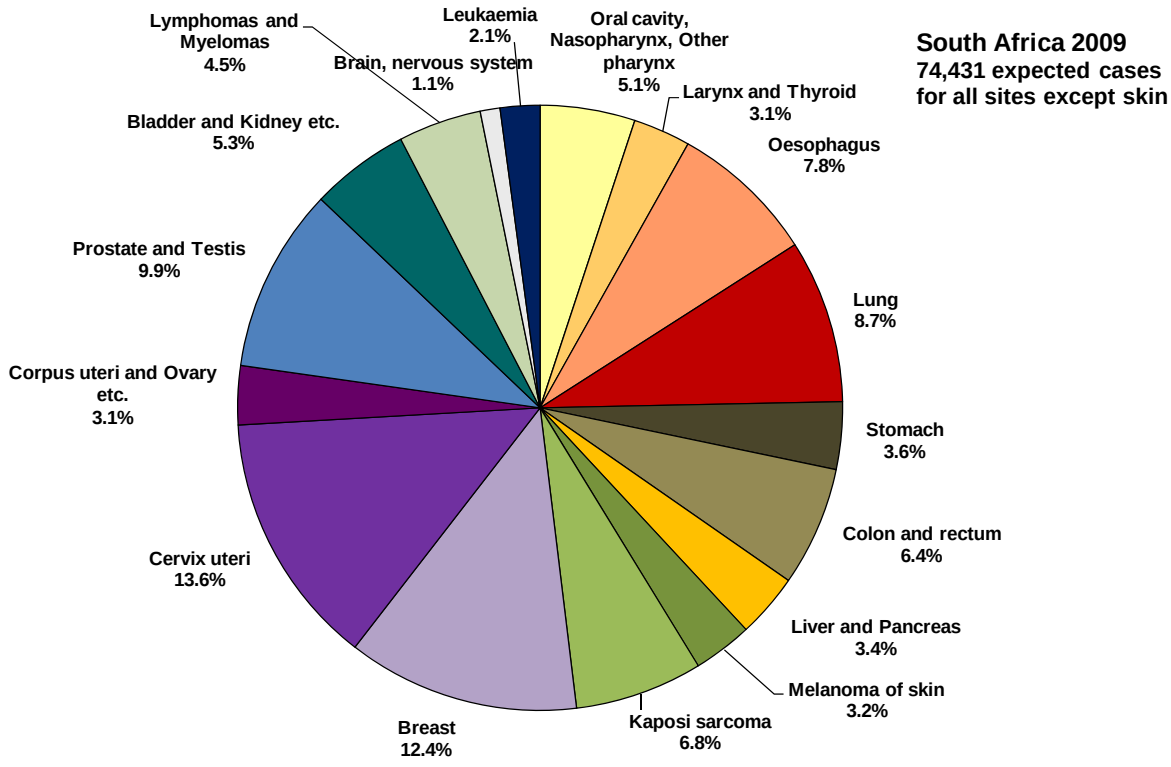

Figure 1: Expected Incidence of Cancers in South Africa in 2009. Source: GLOBOCAN 2002[2]

The Cancer Association continues[1]: "And yet, if one takes a look at South African statistics, age, race, gender and socio-economic status play an important part in determining the prevalence of particular cancers". For example, in order of prevalence in each case:

- Cancers affecting all South African women: breast cancer, cervical cancer, colorectal cancer, lung cancer and oesophageal cancer;
- Cancers more prevalent amongst black South African women: cervical cancer, • breast cancer, oesophageal cancer, uterine cancer and lung cancer.
- Cancers affecting all South African men: prostate cancer, lung cancer, oesophageal cancer, bladder cancer and colorectal cancer.
- Cancers more prevalent amongst black South African men: oesophageal cancer, lung cancer, liver cancer and cancer of the larynx.
- The Cancers most prevalent amongst South African children follow a worldwide trend: leukaemia (24%), brain tumours (21%), lymphomas (16%), cancer of the kidney (Wilm's tumour) (10%) and neuroblastoma.

In the South African Health Review 2008, Day and Gray[3] provide some evidence of the different experiences of the provinces by comparing deaths from cancer by cause, as reproduced in the table derived from StatsSA data below.

Table 34: Percentage of cancer deaths by type of cancer as underlying cause of death, by leading cause, by province, 2005

ICD-10	Type of cancer	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA
C34	Malignant neoplasm of bronchus and lung	15.8	10.7	11.9	11.5	8.0	9.6	17.9	11.7	21.6	13.9
C15	Malignant neoplasm of oesophagus	21.2	7.7	6.2	9.7	10.8	9.8	8.5	12.7	5.3	10.0
C53	Malignant neoplasm of cervix uteri	7.3	12.7	5.9	8.9	16.0	14.2	8.2	11.1	3.6	8.1
C50	Malignant neoplasm of breast	6.3	7.5	9.0	7.0	7.2	8.4	6.6	8.7	8.7	7.9
C80	Malignant neoplasm without specification of site	5.8	7.1	7.9	7.7	5.3	5.5	5.3	5.7	7.5	6.9
C61	Malignant neoplasm of prostate	5.3	6.2	6.3	4.4	7.8	8.0	8.5	7.0	6.0	6.1
C22	Malignant neoplasm of liver and intrahepatic bile ducts	5.9	3.8	3.8	6.2	8.1	6.7	4.2	5.2	3.9	5.1
C18	Malignant neoplasm of colon	2.9	3.7	5.2	3.7	2.2	3.1	2.9	2.9	5.5	4.0
C16	Malignant neoplasm of stomach	3.9	2.8	3.2	3.4	3.4	4.0	4.4	2.9	5.8	3.9
C25	Malignant neoplasm of pancreas	2.4	4.2	4.4	2.9	2.2	3.7	4.6	2.9	3.4	3.4
C85	Other and unspecified types of non-Hodgkin's lymphoma	1.6	3.1	3.4	2.6	1.8	1.9	1.2	2.1	2.4	2.4
C46	Kaposi's sarcoma	2.0	3.3	2.1	4.1	3.0	3.1	0.8	3.4	0.6	2.4

Source: StatsSA Causes of death 2005. Calculated from data.

In a chapter on lifestyle-induced cancer in South Africa[4], the authors found that "population group estimates of the revised SA NBD[a] study indicate that the highest age-standardised cancer death rates are found in the coloured population (212.5/100 000), followed by the white (198.9), African (126.0) and Asian (121.4) groups".

"The Western Cape had the highest cancer death rates followed by Gauteng, the Northern Cape and the Eastern Cape provinces. The lowest rates were found in KwaZulu-Natal (KZN), Limpopo and Mpumalanga. The profile of the type of cancer also differed enormously across the provinces. … The variations between the provinces may be related to levels of wealth and development, population group differences and demographic features of the province, geographical differences and environmental exposures, as well as access to health services or other basic services."

The prevalence of cancer in South Africa is additionally burdened[4] by "the huge load of AIDS-related Kaposi's sarcoma" (KS). "Before the onset of HIV/AIDS, KS was endemic in parts of sub-Saharan Africa, such as Uganda and the Democratic Republic of Congo, comprising about 9% of cancers in

[a] South African National Burden of Disease study

males. KS occurred to a lesser extent in South Africa and was very rare in other parts of the world. With the HIV/AIDS epidemic, KS has become the leading cancer in African countries with high HIV prevalence. Endemic KS affects predominantly the skin of the lower limbs and is primarily a disease of the elderly. In the epidemic form of KS, the lesions are usually multiple and may affect any area of the skin as well as internal organs, with incidence peaks also in the younger, sexually active age groups." The differences in HIV prevalence and the staging of HIV infection by province were dealt with in an earlier policy brief[5].

2. Sources of Data on Cancer in South Africa for NHI Modelling

Data on deaths from cancer is collected by StatsSA and analysed as part of the burden of disease work by Dr Debbie Bradshaw and colleagues[b] at the Medical Research Council (MRC). While this is useful to determine which cancers are responsible for the greatest loss of life, the long-term NHI modelling requires estimates of those needing and being initiated on treatment. The MRC also hosts the Cancer Epidemiology Research Group (CERG)[c]. "The main platform for CERG's research is an on-going case-control study which began in Johannesburg's tertiary hospitals in 1995".

Data on the national incidence and prevalence of cancer is collected by the National Cancer Registry (NCR). Established in 1986[4], this voluntary pathology-based registry is now part of the National Health Laboratory Service. "Cancer data are collected from both public and private pathology laboratories nationally, and it is the only source of national cancer incidence data, albeit the rates reported are an underestimate of the true burden. Only incident cases of primary invasive cancer diagnosed by histology, cytology or haematology are recorded. The main objectives of the NCR are to monitor cancer burden and to publish and report cancer incidence for every year, stratifying by sex, age and population group. The NCR also attempts to report time trends".

The publication of reports has been delayed due to difficulties in receiving data and the loss of key staff[6]. However from March 2008 a "concerted effort is being made to shorten the time lag in cancer incidence reporting". The latest report released is the 2000-2001 NCR Report[d]

A particularly useful source of comparative cancer data is CANCERMondial[e], which "provides access to information on the occurrence of cancer world-wide held and managed by the Cancer Information Section of the WHO International Agency for Research on Cancer (IARC)[f]". The data includes:

- "Incidence data collected by cancer registries worldwide: CI5 (Cancer Incidence in Five Continents) Volumes I to IX. "The nine volumes of Cancer Incidence in Five Continents now cover a period of approximately forty years." "The ninth volume has a wider coverage than before presenting data from around the year 2000 (ideally the period 1998-2002) not only for entire populations but also for sub-populations living in the same geographic area."
- "The data on incidence and survival of children and adolescents in Europe (ACCIS).
- Mortality data extracted from the World Health Organization (WHO) databank.
- The most recent estimates of the cancer incidence, mortality and prevalence, by sex and cancer site, for all the countries of the world (GLOBOCAN 2002).
- The incidence, mortality and prevalence statistics from 41 major cancers in the Nordic countries, starting from beginning of registration (the NORDCAN project in collaboration with the Association of the Nordic Cancer Registries)."

[b] Burden of Disease Research Unit: http://www.mrc.ac.za/bod/bod.htm
[c] Cancer Epidemiology Research Group: http://www.mrc.ac.za/cancer/cancer.htm
[d] The National Cancer Registry: http://www.nhls.ac.za/div_ncr.html
[e] CANCERMondial: http://www-dep.iarc.fr/
[f] International Agency for Research on Cancer: http://www.iarc.fr/

The GLOBOCAN 2002[2] data has been downloaded and used extensively for this policy brief. The estimates for South Africa are based on National Cancer Registry data but with a correction applied by the researchers "because of known under-reporting problem". The observed data is "scaled to incidence using percentage of Microscopically Verified cases observed in the United Kingdom (by cancer, sex and age)". The importance of the GLOBOCAN data is that the estimates have been prepared to be consistent around the world.

Tables for South Africa have been prepared using GLOBOCAN 2002 which give the expected incidence; one-year, three-year and five-year survival prevalence; and mortality. In all cases the tables are by age bands[g] and gender, as well as by site of the cancer. These are available on the IMSA web-site[h] for use by researchers and can be applied to the South African population as a whole. The figures were tested against a group of oncologists and they appear to be consistent with their practise experience and other literature. The graph below illustrates the incidence and prevalence figures per 100,000 lives.

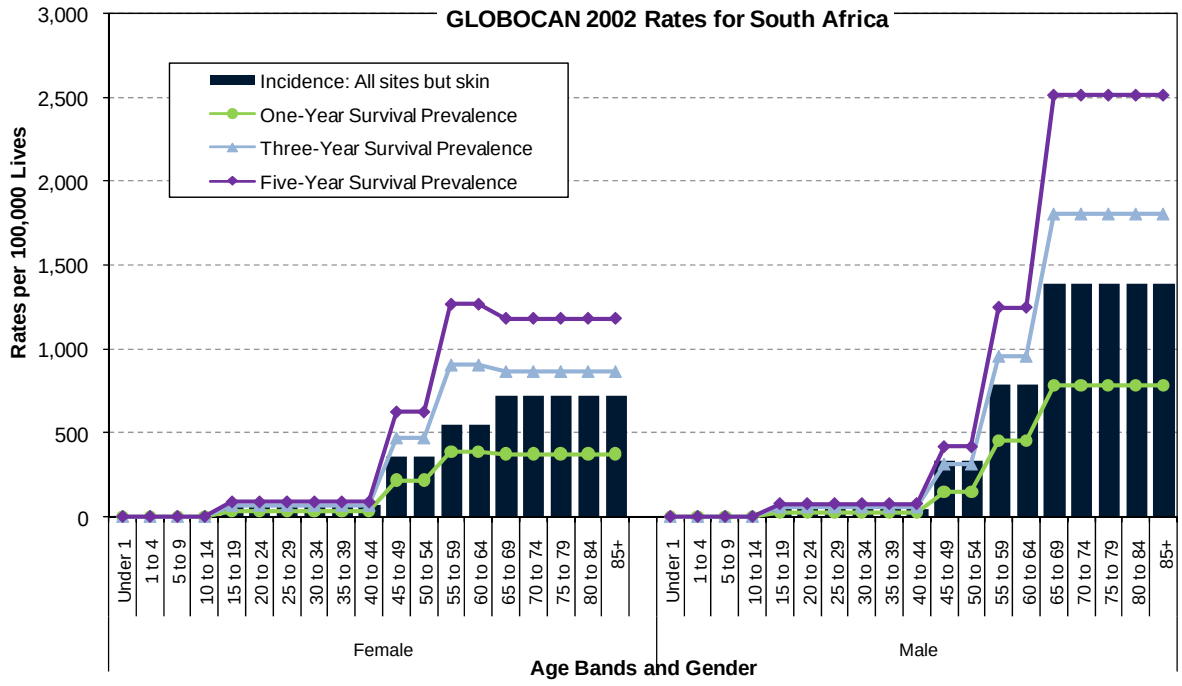

Figure 2: Expected Rates of Incidence and Survival Prevalence of All Cancers except Skin in South Africa. Source: GLOBOCAN 2002[2]

Estimates at a provincial level are bedevilled by the quality of primary data. Researchers evaluating the NCR data reported[7] that "At present, the burden of cancer disease by province cannot be estimated from the available NCR data. This is due to a lack of information on patient addresses. Most clinicians are aware that patients cross provincial borders from less to better-resourced provinces to seek better treatment. Because of existing health policies governing provincial boundaries, patients tend to give local rather than their home addresses. In addition to patient movement, some health practitioners send their patient specimens to other provinces for diagnosis. All these factors reflect the services provided by each province on cancer management rather than the true burden of cancer by province."

"In an effort to get a better understanding of the burden of cancer cases by province, it is recommended that population-based cancer registries be established in the nine provinces. The

[g] The GLOBOCAN data uses fewer age bands than advocated for the NHI modeling. The bands have been extended simply and no attempt has been made to smooth the curves.
[h] IMSA NHI library: http://www.innovativemedicines.co.za/national_health_insurance_library.html

Department of Health ... has recommended the establishment of a rural and urban population-based cancer registry in each of the nine provinces. Until such recommendations come into effect, estimation of cancer incidence by province will remain a difficult task." It has also been suggested[4] that "making cancer a reportable condition (would) improve the quality and accuracy of the national cancer incidence data".

3. Cancer in Medical Schemes in South Africa

The first comprehensive study of the diagnosis-treatment pairs (DTP)[i] in Prescribed Minimum Benefits (PMBs) in medical schemes was done using 2001 data[8]. ICD-10 coding practice has improved substantially since then but there has been no further study of the PMBs by this level of detail, at least in the public domain. The data used for the 2001 PMB-DTP study was provided to the CARe Consortium by Medscheme. The data covers the cost of DTP events in hospitals for the 2001 calendar year and was fully run-off at the time of extraction[j] in July 2002. The data set covered 90 options in 31 schemes, providing 18.071 million beneficiary months of data. The average exposure was 1.506 million beneficiaries over that year which was some 25% of medical scheme beneficiaries in that year, making this a very substantial data set.

5.412 per 1,000 beneficiaries were hospitalised for neoplasms in 2001[9]. 40.2% of these tumours were diagnosed as malignant while a further 19.8% were either growths in situ or not classifiable. Thus 60.0% of all neoplasm admissions were either diagnosed with cancer or could not have the diagnosis of cancer ruled out. Note that malignancy is not a clear-cut indication of the health risk that a tumour represents. For example, the author quotes Youngson that benign brain tumours can pose a greater health risk and require more expensive treatment than some malignant skin cancers, for example.

Treatment of neoplasms accounted for 5.9% of the cost of the PMB package and 5.2% of total claim costs. In total R98.821 million was paid in respect of claims for neoplasms during 2001. The average cost was R15,793 for neoplasm DTPs that were found to be PMBs and R7,538 for those not meeting the PMB definition at that time. Overall, the average cost for all neoplasms was R12,125 in 2001 Rand terms. One serious constraint of this data was that it covered essentially in-patient admissions and costs and the costs of chemotherapy were not available. It was necessary to estimate out-patient costs and these were not done separately for neoplasms.

There has for some years been discussions within the Risk Equalisation Technical Advisory Panel (RETAP) as to whether cancer should be treated as a separate risk factor in risk adjustment. The intention was to gather further data on this and to consider the issue on the next occasion when Risk Equalisation Fund risk factors are evaluated[k]. One concern with adding cancer treatment might be that that it would increase the retrospective nature of payments[l] whereas the current formula for risk adjustment attempts to be largely prospective. The need in recent years to have a means to verify chronic disease[10] has introduced more retrospective assessment of treatment than was originally envisaged.

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[i] There are some 270 diagnosis-treatment pairs in legislation. For example, Code 950J has Diagnosis: Cancer of breast – treatable; with Treatment: Medical and surgical management, which includes chemotherapy and radiation therapy.

[j] A sufficient period of time had elapsed so that all claims amounts were known and hence there was no need to add an estimate for "incurred but not reported claims" (IBNR).

[k] RETAP had expected that there would be annual updates to the REF tables but that a full re-examination of risk factors (which might lead to a new table structure) would only occur perhaps every five to eight years.

[l] Some proof of diagnosis of cancer and/or treatment would be needed before the risk-adjustment payment could be made. This is analogous to the maternity payment which requires a delivery (as defined) to have occurred.

4. The Effect of Poverty on Site of Cancer

In the introduction to a comprehensive Medical Research Council report on Poverty and Chronic Disease in South Africa[11], the editors said: "South Africa, a middle income country, has amongst the most extreme disparities in wealth in the world. ... While poor maternal and child health, infectious diseases and malnutrition are known to be associated with poverty, there remains a need to investigate the relationship between poverty and chronic diseases and their determinants."

In a chapter on policy implications[12], the authors found that " lung cancer occurred more frequently in the rich group compared to the poor group for males and females, (suggesting higher smoking rates in the past). ... Cancer of the oesophagus is usually diagnosed too late to achieve a cure, and thus the high mortality pattern reported here. Death due to cancer of the cervix is the commonest cause of cancer deaths among poor women, and account for a quarter of the years of life lost by these women. If adequate health services were in place to diagnose and treat this cancer through early pap smears or visual examination of the cervix ... the condition can be cured and/or death prevented. ... For poor men the high death rates due to liver cancer also suggest the preventive measure of hepatitis B vaccination has not been adequate among them in the past".

"A most unfortunate sequence of events has inadvertently exposed a group of children living in poor areas to exposures to a carcinogenic mycotoxin, Aflatoxin, which increases their risk of developing liver cancer in later life. The School Feeding scheme for children attending primary schools in poor areas, introduced by President Mandela since 1994, included the use of large amounts of peanuts. In some regions, the necessary quality control to ensure that these peanuts were not contaminated with the mycotoxin Aflatoxin was not done. Exposure to Aflatoxin among people who also are carriers of the hepatitis B virus results in an exponentially increased risk to develop liver cancer. As the programme to vaccinate young children against hepatitis B was only recently introduced, there is a cohort of children exposed to Aflatoxin in peanuts who have not received this vaccine".

"Smoking-related causes of death account for a higher proportion of mortality ... in the rich compared to the poor, particularly in the case of women. Mortality due to lung cancer featured for poor men as well as rich men, suggesting that despite limited resources, poor men do indeed spend their limited resources on tobacco products, competing with food or other essential items. ... However, it is likely that poor people have significantly more exposure to indoor air pollution, resulting from burning wood or coal for cooking and heating during the winter."

5. The Impact of Cancer on a Future NHI

In an introduction to life-style induced cancer in South Africa[4], the authors found "Worldwide, there were approximately 10.1 million new cases, 6.2 million deaths and 22.4 million persons living with cancer in the year 2000.1 This represents an increase of 19% in incidence and 18% in mortality since 1990, in keeping with population growth and ageing."

In South Africa, the expected growth in population numbers and expected aging of the population has a significant effect on the future burden of cancer. Using the GLOBOCAN 2002 rates of incidence and the ASSA2003 population to 2025[13], the number of people in South Africa diagnosed with cancer for all sites except skin is estimated to have been 53,310 in 1994. By 2009 the annual incidence is 74,431 (an increase of 40%) and by 2025 the incidence could be 93,060 cases (an increase of 75% since 1994). This is illustrated graphically overleaf. The table shows the impact on different sites of cancer. Note however that the GLOBOCAN 2002 rates are not separated by socio-economic class and so the effects of poverty on the site of cancer, as discussed above, are not brought through into the estimates. This could be a useful future academic research project.

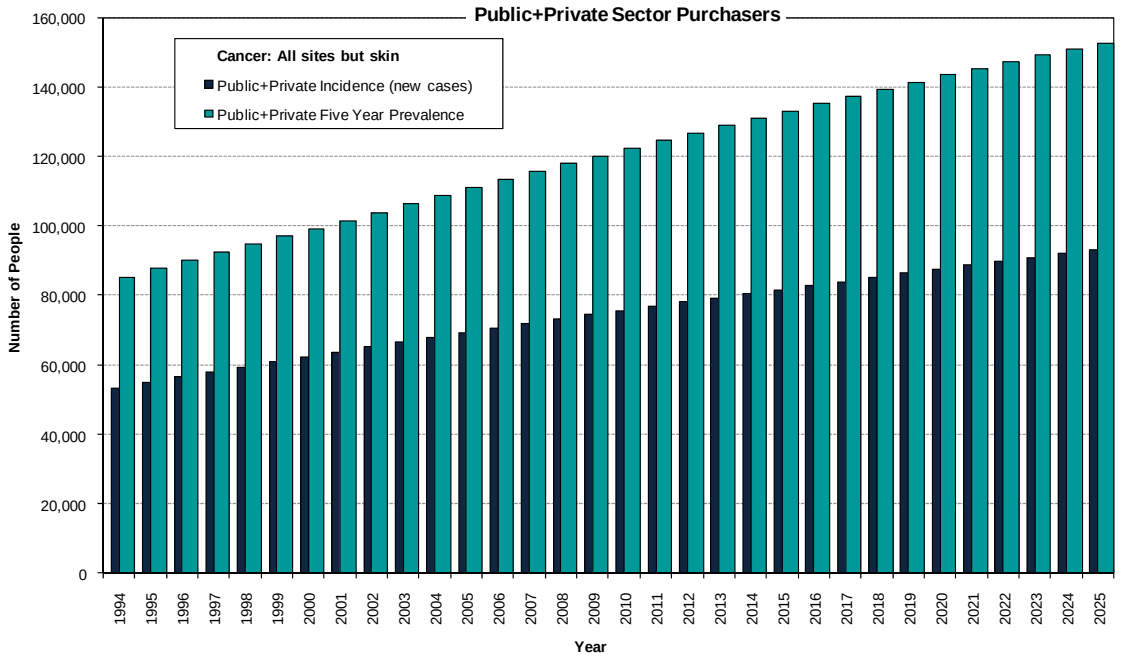

Figure 3: Estimated Incidence and Three-year Survival Prevalence of Cancer in South Africa 1994 to 2025

Table 1: Expected Incidence of Cancer in South Africa 1994 to 2025 by site of Cancer, using GLOBOCAN 2002 with ASSA2003 population projections

Expected Incidence of Cancer Cases							
Site or Type of cancer	**1994**	**2000**	**2005**	**2009**	**2015**	**2020**	**2025**
Oral cavity	1,761	2,054	2,297	2,467	2,700	2,902	3,090
Nasopharynx	273	320	355	379	411	438	462
Other pharynx	263	303	338	365	402	430	454
Oesophagus	3,512	4,086	4,578	4,938	5,447	5,878	6,277
Stomach	1,621	1,889	2,112	2,269	2,506	2,718	2,925
Colon and rectum	2,855	3,333	3,739	4,034	4,501	4,924	5,337
Liver	1,109	1,288	1,434	1,538	1,687	1,812	1,929
Pancreas	436	507	572	623	699	764	823
Larynx	882	1,021	1,141	1,228	1,348	1,450	1,544
Lung	3,929	4,559	5,110	5,514	6,106	6,628	7,127
Melanoma of skin	1,430	1,679	1,872	2,000	2,183	2,342	2,495
Kaposi sarcoma	3,293	3,847	4,163	4,323	4,525	4,658	4,767
Breast	5,361	6,385	7,233	7,859	8,676	9,291	9,805
Cervix uteri	5,950	7,073	7,963	8,598	9,363	9,884	10,287
Corpus uteri	528	622	706	780	897	993	1,074
Ovary etc.	828	978	1,105	1,203	1,341	1,446	1,532
Prostate	4,503	5,074	5,622	6,017	6,711	7,371	8,076
Testis	160	188	203	211	222	229	236
Kidney etc.	645	732	802	854	922	977	1,026
Bladder	1,788	2,066	2,310	2,483	2,760	3,017	3,278
Brain, nervous system	509	583	636	670	714	748	778
Thyroid	508	602	670	710	757	792	823
Non-Hodgkin lymphoma	1,218	1,410	1,555	1,654	1,790	1,900	2,001
Hodgkin lymphoma	371	432	468	486	507	521	533
Multiple myeloma	475	553	621	674	749	811	868
Leukaemia	1,042	1,181	1,278	1,342	1,427	1,493	1,550
All sites but skin	**53,310**	**62,146**	**69,335**	**74,431**	**81,617**	**87,566**	**93,060**

6. Provider Initiative for Making Treatment more Affordable

In my opinion, a good example of the way in which healthcare providers should be responding to affordability constraints and thinking about their practice under a future National Health Insurance system is the Independent Clinical Oncology Network (ICON)[m], an oncology managed care group.

The rationale for ICON[14] has been that "the cost of oncology treatment is rising sharply due to technological advances; the number of cancer cases (is) increasing sharply as people grow older and live longer;" and to deal with difficulties in access to oncology treatment for patients on low cost medical scheme options where the limits had previously made standard oncology care unaffordable.

"The basis of the ICON network is strict adherence to protocols that are driven by treatment intent." Two years ago the doctors re-organised their business model, in consultation with funders and suppliers, so that it has become possible to provide an improved package of radiotherapy and chemotherapy services to more low income patients than was previously available.

ICON aims "at providing care equivalent to best available in public sector facilities"; uses a network of private facilities distributed geographically across the country (there are currently 18 units countrywide with an additional 7 being planned); "allows patients to have immediate access to care with no waiting lists; and at costs that compare favourably to public sector".

ICON uses "case management, utilization management, independent medical evaluations and medical bill review" in order to ensure that care is delivered appropriately. "In the insured market, ICON is typically aimed at lower benefit options. ICON is aiming to improve access for those currently enjoying limited access to cancer services in the private sector. ICON is also ready to accept and roll out its services to the patients of government health authorities."

7. Research and Further Resources on Cancer in South Africa

The chapter on life-style induced cancer in South Africa[4] contains excellent material on the aetiology and the epidemiology of each cancer type in South Africa. The authors also describe various research initiatives. "The important CANSA/MRC workshop held in February 2004 evaluated the future of cancer research in the country and resulted in a proposal for the creation of a multi-disciplinary, multi-organisational group called the Cancer Research Initiative of South Africa (CRISA)[n]. ... The organisation "aims to improve the health status of South Africans by promoting a national, comprehensive and sustainable cancer research system that will develop capacity and knowledge in the following areas: primary prevention, secondary prevention, treatment, palliation, and monitoring and evaluation.

CRISA has a section on Social and Public Health Research and Health Economics[o] which intends to foster research in the following areas:

- The costing of models for prevention vs. curative care.
- A cost analysis of the burden of cancer on the SA economy (to) influence the finance budget that relates to cancer and the expenditure relating to treatment and prevention activities.
- Determining the cost of cancer treatment. What is effective medical aid coverage and how does this effect prevention. (Private vs. State)
- The reduced cost of cancer prevention models, such as tobacco legislation, on the health care system and on the SA economy.

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[m] Independent Clinical Oncology Network (ICON): http://cancernet.co.za/
[n] Cancer Research Initiative of South Africa: http://www.carisa.org.za/index
[o] CRISA Social and Public Health Research: http://www.carisa.org.za/aboutSphr

Other resources in South Africa include:

- Cancer Association of South Africa (CANSA): http://www.cansa.org.za
- The Programme on Mycotoxins and Experimental Carcinogenesis (PROMEC Unit) of the South African Medical Research Council (MRC): http://www.mrc.ac.za/promec/cancer.htm
- Oesophageal Cancer Research Group: http://www.mrc.ac.za/oesophageal/oesophageal.htm
- MRC Cancer Epidemiology Research Group: http://www.mrc.ac.za/cancer/cancer.htm
- MRC Oncology Research Unit: http://www.mrc.ac.za/oncology/index.htm

8. Planning a Cancer Service for a National Health System

In the course of research work for facility planning for the Western Cape Department of Health, a very useful set of documents was found on the planning of a comprehensive cancer service in the United Kingdom.

The early Calman-Hine report[15] proposed three levels of care "to ensure the creation of a network of care in England and Wales to ensure that patients, wherever they live, receive treatment and care of a uniformly high standard":

> **"Primary care** is seen as the focus of care. Detailed discussions between Primary Care Teams, Units and Centres will be necessary to clarify patterns of referral and follow up which will ensure the best outcomes."
>
> **"Designated Cancer Units** should be created in many district general hospitals. These should be of a size to support clinical teams with sufficient expertise and facilities to manage the commoner cancers[p]. The most common cancers are initially managed by surgeons and the provision of appropriate surgical specialists to manage patients in this phase of their illness, either for their diagnosis or for the performance of a major surgical resection, is essential. The service within Cancer Units in district hospitals is in many ways surgically led and this is not likely to change in the foreseeable future.
> The size of a population served by a Cancer Unit cannot be inflexibly defined but will be determined by the number of cases of each cancer type being seen there, related to professional guidance on the number of cases necessary to develop and maintain expertise. Not all district hospitals will be Cancer Units. Their location will be influenced by the distance of that population from a Cancer Centre and from other Cancer Units."
>
> **"Designated Cancer Centres** should provide expertise in the management of all cancers, including common cancers within their immediate geographical locality and less common cancers by referral from Cancer Units. Although the Expert Advisory Group believe that a Cancer Centre will normally serve a population of more than 1,000,000, careful consideration of geographical constraints will always be necessary to ensure a balanced service. A population base of two-thirds of a million should however be considered an absolute minimum.
> The services that will be a feature of most Cancer Centres are:
>
> - Paediatric and adolescent cancer services. All populations should have access to these services;
> - The assessment and management of rare cancers in multi-disciplinary teams and the accumulation of expertise in these treatments;
> - Specialist surgical services including plastic and reconstructive surgery;

[p] Common cancers include breast cancer and colorectal cancer. Moderately common cancers include ovarian cancer, haematological malignancies, oesophageal cancer, gastric cancer and pancreatic cancer.

- Intensive chemotherapy particularly involving complex haematological support such as bone marrow transplantation and peripheral blood stem cell support;
- A full range of radiotherapy facilities with appropriate numbers of clinical oncologists to ensure specialised application;
- Medical oncology;
- Sophisticated diagnostic facilities (pathology and imaging); and
- Special expertise in palliative care and rehabilitation."

Interested policy-makers and researchers are directed to the extensive UK material on the topic[q], including The NHS Cancer Plan[16]; the Manual for Cancer Services[17]; the Cancer Commissioning Guidance for local health authorities[18]; material on planning for chemotherapy services[19]; and planning the need for radiology equipment[20]. The linear accelerator equipment forecasting makes use of the GLOBOCAN 2002 figures to estimate future need by type of cancer and this could readily be adapted for planning purposes in South Africa, in discussion with local groups of oncologists.

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Resources on the IMSA Web-site

The following are available on the NHI section of the IMSA web-site: www.imsa.org.za

- The slides and tables used in this policy brief [PowerPoint slides].
- Tables from GLOBOCAN 2002 on the rates of incidence, survival and mortality for South Africa for each type of cancer [Excel spreadsheets].
- Tables of the expected future population in South Africa and each of the nine provinces are found in the resources section of Policy Brief 1 [Excel spreadsheets].
- Tables giving the WHO staging of HIV infection to 2025 by province are found in the resources section of Policy Brief 4 [Excel spreadsheets].

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