The global burden of cancer

Cancer represents a significant economic burden for the global economy and is now the third leading cause of death worldwide. By 2030, it is projected that there will be 26 million new cancer cases and 17 million cancer deaths per year.

The developing world is disproportionately affected by cancer, and in 2008, developing nations accounted for 56% of new cancer cases and 75% of cancer deaths. These deaths happen in countries with limited or no access to treatment and with low per capita expenditure on healthcare. In recognition of this, the Union for International Cancer Control conceived the World Cancer Declaration in 2009 to achieve 11 targets by 2020.

World Cancer Declaration
1. Sustainable cancer care delivery in all countries
2. Measurement and monitoring of the global cancer burden
3. Reduce global tobacco and alcohol use, and obesity
4. Universal hepatitis B and HPV vaccination
5. Improve the public’s understanding of and attitude towards cancer
6. Screening and early detection programmes
7. Access to cancer services, including diagnosis, rehabilitation and palliation
8. Universal pain control
9. Increased training opportunities for healthcare workers
10. Reduce emigration of specialist cancer healthcare workers
11. Improvements in cancer survival

Developed and developing countries
Developing nations do not have the funding, expertise or infrastructure to deliver effective cancer services. They have limited or no cancer screening, few facilities and patients have limited access to treatments and analgesia. The lowest-income countries have a survival rate of
declined over the past 50 years, even though it remains the second screening for cervical cancer following donations by pharmaceutical became the first country in Africa to introduce HPV vaccination and recent years a vaccination against HPV has become available. Rwanda women worldwide, with 80% of cases in developing nations. HPV developed nations). Infections Chronic infection accounts for 18% of cancers worldwide, the most common including cancers of the cervix, stomach and liver, in turn caused by HPV, Helicobacter pylori and hepatitis B and C virus. These pathogens are more prevalent in developing nations, where the resulting cancers are threefold more prevalent (26% compared with 8% in developed nations).

Cervical cancer is the fourth leading cause of cancer mortality in women worldwide, with 80% of cases in developing nations. HPV infection rates can be reduced by the use of condoms, and in more recent years a vaccination against HPV has become available. Rwanda became the first country in Africa to introduce HPV vaccination and screening for cervical cancer following donations by pharmaceutical and diagnostic companies.

The incidence and death rates from gastric cancer have steadily declined over the past 50 years, even though it remains the second leading cause of cancer mortality (65% in developing nations). Chronic or recurrent infection with H. pylori is the main cause of chronic gastritis and peptic ulcers and increases risk for developing gastric lymphoma and cancer of the distal stomach. The exact causes of the worldwide decline in gastric cancer incidence in the past decades are not known but are thought to include improvements in diet, food storage and a decline in H. pylori infection due to a general improvement in sanitary conditions and increasing use of antibiotics. More than 80% of liver cancer cases occur in developing nations, with more than 55% occurring in China alone. Globally, 75% of all liver cancer cases and 50% of all deaths are caused by chronic infection with either HBV or HCV. A safe and effective vaccine against HBV is available and is the most cost-effective strategy to reduce liver cancer. More than three-quarters of WHO member states have introduced hepatitis B vaccine into routine infant immunisation schedules, although vaccine delivery is particularly challenging in high-risk, low-resource areas of Africa.

Challenges Prevention with vaccination against certain cancers could reduce the cancer burden, with protection against HBV and HPV.

Education is important as low rates of literacy are associated with regions of poverty. Education about cancer could result in earlier diagnosis, better engagement with screening, and acceptance of diagnostic and treatment services. Such approaches need to reflect the local cultural requirements.

Access to treatment is resource limited as treatment for cancer relies on surgery, radiotherapy and chemotherapy, all of which remain expensive and often unavailable in developing nations. New targeted therapies will be too expensive and therefore the newest developments in therapy will be unavailable without successful engagement of the pharmaceutical industry to negotiate reimbursement schemes that might make new drugs more affordable and accessible.

Cure the curable: with a greater understanding of the hallmarks of cancer, specific features of cancers can be used as targets for treatment and could be used to reclassify the cancers. Understanding the micro-environment of the cancer cell is vital to delivering successful future therapies, but open access to research findings for all nations should be a key principle for funding research.

Provide palliation whenever it is required as the majority of cancer treatment is not aimed at cure, but more to control the patient’s symptoms. Access to analgesia is often poor, with only 9% of the world’s morphine used in developing nations, which have 83% of the world’s population. In some regions of Africa, patients have to walk for more than a day in each direction to and from a pharmacy to receive only 5 days’ supply of medication. There are persisting misconceptions about the problems of strong opioid analgesia that have yet to be overcome.

End of life care is not expensive but requires involvement of the family and other care givers. It can be improved by access to better training and education and provision of community-based services that understand the diversity and requirements of the local population.