# Chapter 1 - Introduction

Cancer is one of the major health hazards in the world. In contrast to the situation a few decades ago, the majority of the global cancer burden now occurs in medium- and low-income countries. Assuming an annual increase in cancer incidence and mortality of 1%, by 2030 there could be 26.4 million new patients with cancer, 17.1 million annual cancer deaths, and 80 million people alive with cancer within five years of diagnosis.

The worldwide economic toll of cancer diagnosis and treatment is also important. It has been estimated that global cancer care in 2009 cost $ 286 billion while the projected global cost in 2030 is $458 billion. In 2011 the total estimated direct medical costs in the United States of America (USA) were $88.7 billion according to the Agency for Healthcare research and Quality. If costs of care increase annually by 2% in the initial and last year of cancer care, the total cost in 2020 is projected to be $174 billion. In the 27 countries of the European Union, the cancer cost was estimated to be €126 billion in 2009 and is estimated to increase further due to the demographic shift.

The costs of health care in relation to cancer have been increasing rapidly due to the introduction of new diagnostic techniques and treatments, requiring additional resources for these areas. Consequently, it is important that the available funding is used in an optimal way to ensure the continuity of adequate cancer diagnosis and treatment.

Diagnosis should identify the presence of cancer, mostly by pathological or cytological examination, and the extent of the disease by staging. Several staging examinations are available, but only those that are relevant should be employed. New techniques should be evaluated in randomised clinical trials before they enter daily clinical practice.

Results from pathology and staging examinations, together with patient-related factors, can determine the prognosis of patients with cancer. Combined with society-related factors, these examination results play an important role in determining optimal treatment strategies.

Several predictive factors that can indicate response to a specific treatment have been determined and can be used to direct treatment choices. When opting for a specific treatment, adequate treatment evaluation and prevention of acute and late toxicity should be taken into account to preserve the quality of life of cancer survivors.

Revalidation and reintegration in society should be envisaged after diagnosis and treatment of cancer.

This handbook describes and discusses cancer diagnosis and treatment evaluation.

## Further Reading

- http://cancerprogressreport.org/Pages/GetACopy.aspx
- http://www.cancer.org/cancer/cancerbasics/economic-impact-of-cancer
- http://costprojections.cancer.gov/

- Luengo-Fernandez R, Leal J, Gray A, Sullivan R. Economic burden of cancer across the European Union: a population-based cost analysis. Lancet Oncol. 2013 Nov;14(12):1165-74. doi: 10.1016/S1470-2045(13)70442-X. Epub 2013 Oct 14.