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# Deep Learning in Cancer Diagnostics

A Feature-based Transfer  
Learning Evaluation

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A Feature-based Transfer Learning Evaluation

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# Chapter 1

## Epidemiology, Detection and Management of Cancer: An Overview



**Abstract** Worldwide, breast cancer is recorded as the most prevalent cancer, with high mortality and morbidity rate of incidence amongst females. Meanwhile, lung cancer incidence, which is dominantly in the male population, was ranked as the third most common cancer in women. In addition, oral cancer, which refers to the cancers of the lip and oral cavity that include the lips, tongue, mouth, floor and palate, collectively had 90% of oral cancers begin as oral squamous cell carcinomas. In addition, skin cancer caused by the mutation of the skin cell has been ranked the seventeenth most common cancer worldwide, with new cases of non-melanoma skin cancer reported at 324,637. Even though many interventions have been done, the cases remain high worldwide due to late detection and poor management of the cancers. This chapter describes the epidemiology of cancers and the current method of detection and management of the diseases.

**Keywords** Epidemiology · Cancer Detection · Cancer Management

### 1.1 Introduction

According to Globocan 2020, the total number of new cancer cases was reported at 19,292,789 cases [1]. The cancer incidence rate was highest in Asia, followed by Europe and Northern America. Meanwhile, the cancer mortality rate was highest in Asia, Europe, Latin America and the Caribbean. The highest cancer was reported from breast cancer, followed by prostate and lung cancer. The incidence of breast cancer was reported at 47.8 cases for every 100,000, indicating the frequency of cancer remains high.

On the other hand, the incidence of lung cancer was reported at 22.4 cases per 100,000, showing that cancer cases remain high even though the management of lung cancer has been improvised. Even though the incidence of oral cancer is still considered low compared to other types of cancers, however, worldwide, 377,713 new cases were reported. Furthermore, skin cancer which was ranked the seventeenth highest number of new cases was reported to have total number mortality of 57,045 in 2020. Due to this high incidence of cancers, this chapter describes the epidemiology

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