

ADI Medical UK

Excerpt from “Commercial Opportunities in Medical Devices” September 2010

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1.0 DISEASE MANAGEMENT AREAS

1.1 Scope and Definitions

As might be expected, a diversity of disease profiles exists throughout the world. In the more developed countries, the clear, greatest causes of death are heart disease and cancer. This however is not always the case in less developed countries. In Africa, for example viral diseases, including AIDS and bacterial infections account for most mortality. Figure 4 & 5 show current global disease prevalence and the principal causes of mortality in the developed markets, where most modern devices are used.

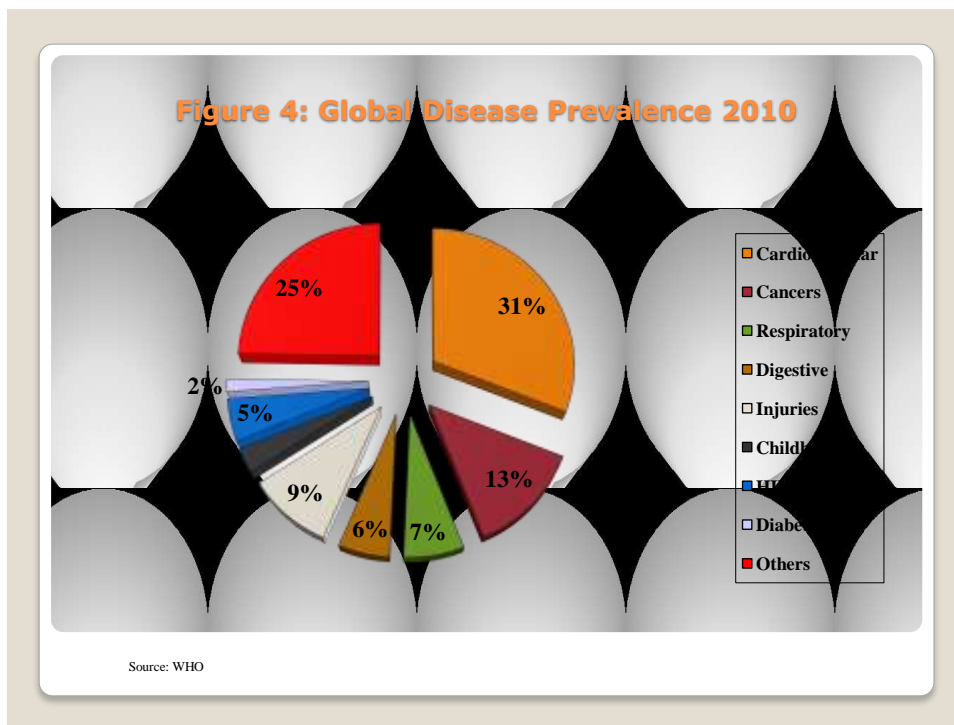


Figure 5 : Principal Causes of Mortality by Area

	America	Europe	Asia	Oceania
1.	Cardiovascular Diseases	Cardiovascular Diseases	Cardiovascular Diseases	Cardiovascular Diseases
2.	Cancers	Cancers	External Causes	Cancers
3.	External Causes	External Causes	Cancers	External Causes
4.	Respiratory Diseases	Respiratory Diseases	Respiratory Diseases	Respiratory Diseases
5.	Digestive Diseases	Digestive Diseases	Digestive Diseases	Digestive Diseases
6.	Liver Diseases	Liver Diseases	Infectious Diseases	Liver Diseases
7.	Infectious Diseases	Infectious Diseases	Infectious Diseases	Infectious Diseases

Source: WHO

With this in mind, the report considers the most common disease areas, especially where devices form a major part of therapeutic treatment options for healthcare providers. These therefore are:

- **Cardiology** – The highest potential for medical devices, with also substantial growth prospects inherent in the area. Major advances have taken place in recent years, capitalising on the benefits of minimal access therapies, whilst also benefiting from engineering and material developments to provide more efficacious devices.
- **Oncology** – The battles against cancer are as opportune in the diagnostics field, as for devices. The clearer understanding of disease progression and manifestation has led to a definitive reality, that, the earlier diagnosed, the better the survival chances. Improved radiotherapy and surgical management is also increasing survival, once diagnoses are made.
- **Orthopaedics** – Although rarely life threatening intervention, this field however impacts the quality of life issue heavily. It is also reflected on the ageing population issues in developed countries and is therefore a key to future health management strategies within countries. Large, costly and competitive, the worldwide orthopaedics market is constantly evolving and developing, providing much future opportunity.
- **Urological and Renal** – Analysed because of the substantial growth seen in the last decade and future potentials for capitalising on developing technologies. Many deaths are end

resultant for ultimate kidney failure. The whole field, therefore represents considerable scope for life saving and enhancing therapies.

- Wound Care – This is probably one of the most open fields to new technology opportunities in coming years. The interface between drugs and devices is most vividly seen here, as new developments take advantage of device and chemical combinations to treat debilitating and life threatening conditions.
- Gynaecology – The field of women’s health in general is providing greater opportunity for device companies. Specific issues of modern gynaecology, particularly in respect of minimally invasive and fast recovery surgical approaches are drawing interest in this specialised field.
- Infection Control – May well represent the greatest opportunity within the second decade of the 21st century. Widespread and over use of antibiotics, coupled with reactions to other medical interventions, provides an ongoing battle against bacterial infection. Management and control of this, especially within hospital environments place spiralling costs on healthcare resource. The ability of future device generations to alleviate this provides the background to a key opportunity in the sector.

1.2 Diagnostic Advances

As previously mentioned, the ability to provide ever-advanced healthcare solutions, through medical device technology, depends on accurate and timely diagnosis.

Any disease is most easily treated, when the diagnosis is made in timely fashion, lessening the chance for spread and increasing the options for treatment. In tandem with advances in the technology and innovation behind modern devices, the diagnostics industry has also advanced in tandem. Many diseases can now be diagnosed with simple, point of care tests, either in clinics, or doctor’s offices. Whilst more advanced test requirements have also improved in accuracy, specificity and sensitivity over recent years, which again provide vital information for clinicians to ensure they offer the correct treatment for specific diseases.

Equipment orientated diagnostic systems; also provide advances in imaging techniques to aid clinicians in diagnosis. Ultrasound has developed fast in the last decade and can now often be conducted as a portable test. Fixed hospital based systems have also improved in accuracy, aided by

advanced computer simulations. X-Ray, CT scanning and the more recently developed MRI scanners are examples of these.

Whilst this report does not focus directly on diagnostic products, there potential in aiding the provision of quality and advanced healthcare however must always be borne in mind.

2.0 CARDIOLOGY

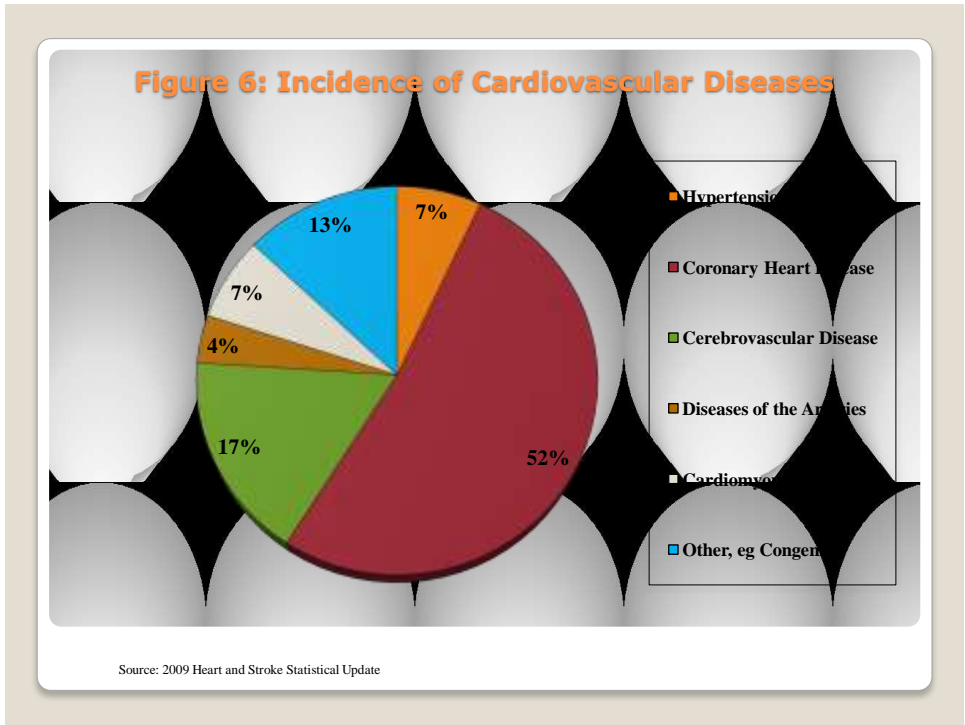
2.1 Background to Device Usage

Since cardiovascular disease represents the highest cause of death in all societies, it is unsurprising that interventions and the devices used for them are the most widely used of any devices. The history of development of devices in this area is a key determinant of the development of devices in general and reflects the improvements in clinical development, technology, materials, engineering and production. As with most devices, rapid developments have taken place in the last 25 years, although the subject of studies of the heart date back to 400BC, when heart anatomy was being studied on cadavers.

Cardiology is the study, diagnosis and treatment of diseases of the cardiovascular system. Since statistics have been available, cardiovascular disease (CVD) has been the leading cause of death in all western countries and in more recent times, worldwide. In 1999, one third of all deaths were caused by CVD. The group of disorders commonly referred to as CVD, include

- Hypertension
- Coronary Heart Disease
- Cerebrovascular Disease
- Peripheral Vascular Disease
- Heart Failure
- Rheumatic Heart Disease
- Congenital Heart Disease
- Cardiomyopathies

Figure 6 breaks down the common incidence of these in developed countries.



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