

BUSINESS ENVIRONMENT CONTINUED

THERAPY AREA ENVIRONMENT

According to the World Health Organization (WHO), the greatest burden of disease is in non-communicable disease. Conditions such as malignant tumours, ischaemic heart disease, diabetes, cerebrovascular disease, chronic obstructive pulmonary disease (COPD), schizophrenia, bipolar disorder and asthma are significant contributors. However, communicable diseases are also increasing, due primarily to emerging bacterial and viral resistance and an increase in incidence of tuberculosis, and remain a major cause of disease in the developing world.

Our resources, skills and experience are focused on the following therapy areas, which together represent a significant proportion of the worldwide burden of disease:

Cardiovascular (CV)

CV disease claims more lives each year than the next four leading causes of death combined. It accounts for 17 million deaths worldwide annually, making it the greatest risk to life for most adults. CV is also the single largest therapy area in the global healthcare market, with a world market value of \$145 billion. One in three adults has some form of CV disease, including diseases such as high blood pressure (market value \$51 billion), abnormal levels of blood cholesterol (market value \$34 billion), thrombosis – including heart attacks and stroke (market value \$19 billion) and diabetes (market value \$23 billion). High blood pressure and abnormal levels of blood cholesterol are well known to damage the arterial wall and thereby to lead to atherosclerosis. The most important and frequent manifestations of atherosclerosis are heart attacks and stroke due to thrombin formation in association with ruptured atherosclerotic plaque. Diabetes is associated with an increased risk for a number of serious, sometimes life-threatening complications, including heart attack, stroke, blindness, kidney disease, nervous system disease and amputations. Heart disease death rates among adults with diabetes are two to four times higher than the rates for adults without diabetes. Diabetes is the most rapidly increasing risk factor for CV disease, driven by a dramatic increase in obesity on a worldwide scale. In the US, 21 million people suffer from diabetes and two in five people with diabetes still have poor cholesterol control, one in three have poor blood pressure control and one in five have poor glucose control.

Gastrointestinal (GI)

The world GI market is valued at \$37 billion, of which the proton pump inhibitor (PPI) market represents \$25 billion. In the West (ie Europe and North America combined), according to different estimates, between 10% and 20% of adults suffer from gastro-oesophageal reflux disease (GERD). The prevalence rate of GERD in Asia is lower but increasing.

In spite of effective treatments with PPIs, around 40% of patients do not achieve full relief from symptoms.

Neuroscience

The neuroscience market value totals approximately \$120 billion. It comprises psychiatry (market value \$53 billion), neurology (market value \$35 billion), analgesia (market value \$27 billion) and anaesthesia (market value \$4 billion). The medical need continues to be significant in all of these areas. For example:

- > Depression and anxiety disorders remain under-diagnosed and under-treated, with 15% of the population suffering from major depression on at least one occasion in their lives. Schizophrenia affects around 1% of the population, and 17 million people suffer from bipolar disorder across the major markets.
- > Alzheimer's disease affects approximately 24 million people worldwide today, with this number predicted to reach 40 million by 2020. Further, current therapy has a modest symptomatic effect and does not significantly modify the course of this progressive neuro-degenerative disorder.
- > Chronic pain, which affects over 20% of the population, is a significant medical need, with pain management the most common reason for seeking medical care.

Cancer

The world market value for cancer therapies is \$39 billion and increasing strongly. Despite dramatic advances in treatment, cancer remains the second highest cause of death in developed countries, and epidemiological evidence points to this trend now emerging in the less developed world. At present cancer accounts for 7.6 million (or 13%) of all deaths worldwide annually, with these numbers projected to continue rising, resulting in an estimated nine million deaths from cancer in 2015 rising to 11.4 million in 2030. Globally, lung cancer kills more people than any other tumour type. However, there

are significant differences in the pattern and severity of disease between Asian and Western populations. Whilst breast, prostate and colorectal cancers are common in the West, gastric and liver cancers are more prevalent in Asia.

Respiratory & Inflammation (R&I)

The respiratory world market value is \$48 billion. The WHO estimates that 100 million people worldwide suffer from asthma and more than twice that from COPD, which is currently the fifth leading cause of death in the world with further increases in the prevalence and mortality of the disease predicted for the coming decades. The inflammatory market is estimated to be worth \$17 billion, with nearly 50% being for the treatment of rheumatoid arthritis. Biological therapies dominate the inflammatory market in terms of sales value.

Infection

The world market value for the treatment of infection is \$67 billion, with anti-bacterials accounting for approximately half and anti-virals a quarter of this value. World demand for antibacterial antibiotics remains high, due to escalating resistance and the increased risk of serious infections in both immunosuppressed patients and ageing populations. The need for new, effective anti-virals, either for prevention or as treatment, is apparent in many viral syndromes where there are currently few satisfactory options. For instance, the hepatitis C virus infects an estimated 170 million people worldwide, but therapy for the strains that predominate in the US and Western Europe require 12 months' treatment and produces a durable cure in only 50% of patients. Respiratory syncytial virus (RSV) is the most common cause of infant hospitalisation in the US. Approximately one-half of all infants are infected with RSV during the first year of life and nearly all children in the US have been infected by the time they reach their second birthday. Unlike other viral infections, there is no natural immunity created by RSV, so repeated infection is likely and common. Additionally, tuberculosis remains a worldwide threat and is newly diagnosed in approximately two million people every year in India alone and over eight million people worldwide.

Information about the medicines we have or are developing in the above disease areas and our 2007 product performance is set out on pages 50 to 68.